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AT WORK IN FEURT MOUND NO. 3.

Certain Mounds and Village Sites in Ohio

VOL. 3 PART 1

The Feurt Mounds and Village Sites

BY

WILLIAM C. MILLS, M. SC.

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THE FEURT MOUNDS AND VILLAGE SITE.

BY WILLIAM C. MILLS.

The Feurt Mounds and Village Site are situated about five miles north of the city of Portsmouth, on the east side of the Scioto river, in Clay township, Scioto county, Ohio. The land upon which this group of mounds and the village site is located is a part of the estate of Mr. William C. Feurt, which consists of more than 400 acres of rich bottom lands and sloping hillsides, and is considered one of the most productive and well-kept farms along the Scioto. Mr. Feurt, who gives personal attention to his farm, lives in a commodious and stately mansion, constructed in an early day by his father and added to, as required, by the son until today it stands among the most beautiful farm residences in the Scioto valley.

The immediate location of the mounds and village site is a level plateau of less than five acres in extent, elevated a little more than forty feet above the bottom land into which it projects, promontory like, with steep and very abrupt banks. Looking south from the site of this village upon the broad and beautiful valley of the Scioto, and westward across the river valley to the foothills, where is located the Tremper Mound, one is impressed with the fact that early man in the Ohio valley took advantage of natural surroundings in selecting a site for his home.

The original top soil of this plateau was a clay loam of several feet in thickness, underlaid with gravel. The present top soil is from six inches to four feet above the original surface, as a result of the custom of the inhabitants of the village in carrying soil from the sides of the abrupt bank and covering up the accumulated debris in and around their tepee sites. When these places were uncovered, the story of the primitive peoples, who doubtless for a long period of time made this site their home, was revealed.

THE GENERAL TOPOGRAPHY OF THE COUNTY.

Scioto county is very rugged in all its parts, and is bounded on the south by the Ohio river, which separates Ohio from the Kentucky hills. The Scioto river flows through the county from north to south forming its junction with the Ohio at Portsmouth, the capital of the county. The valley of the Scioto is perhaps the most fertile and the broadest of any of the river valleys emptying into the Ohio. The hills on the east side of the river are higher than those on the west, and many of them are still covered with the deep tangled forest, unchanged since the days when early prehistory man roamed over them in search of game and food, or of the Ohio pipestone, which he prized so highly for making into pipes and ornaments.

GEOLOGY.

Scioto county presents many very interesting features as regards geological formations, that were taken advantage of by primitive man. The Ohio pipestone, which outcrops on the very summit of the highest hills on the east side of the river, dips to the east and covers the entire eastern portion of the county. The pipestone stratum varies in thickness from one foot to eleven feet, the average being three and one-half or four feet. At the outcrop on the summit of the hill, as shown by the old quarries made by primitive man, the color is light gray with a reddish tint, gradually shading into a dark red, which resembles the Minnesota pipestone.

The Ohio pipestone was extensively quarried all along the crest of the hill. Many of these old quarries have been extended by white men, who sought to use the product in the making of fire brick, but the percentage of iron was too great, and the project was abandoned. The pipestone, however, as quarried by primitive man, was entirely suited to his purpose, as it was readily carved into form and would take a high polish. The prehistoric inhabitants of the Feurt village site used this pipestone extensively for making pipes and ornaments, as did the builders of the Tremper mound, located directly across the river on its west bank, from which the beautiful effigy pipes were taken in 1915 by the survey.

The Ohio black shale outcrops on the west side of the river and is one of the lowest stratums exposed in the county. In color the shale is very black and takes a high polish, but when exposed to the air and sun after being dug from the earth, it has a tendency to split up into thin sheets and finally to disintegrate. The shale was extensively used by the dwellers of the Feurt village, large slabs of it often being found in a single tepee site. On a piece of this black shale, roughly shaped into the form of a spear head, seven inches in length, was drawn a grotesque mythical conception of a water serpent, with pronounced canine teeth and protruding spines.

HISTORICAL DATA CONCERNING THE SITE.

The peoples who constructed the Feurt mounds and lived in the village site belonged to the great Ft. Ancient culture, as attested by the mode of burial of their dead, and by the artifacts, found in profusion over the entire site. The land has been in possession of the Feurt family for many years and the site has always been known to local collectors as a very prolific field for their favorite pastime of hunting Indian relics.

Of the local collectors, Mr. Chas. V. Wertz of Portsmouth, perhaps has the largest collection found upon this site. Mr. Wertz very kindly permitted the survey to make use of his collection, which was picked up from the surface from year to year as the land would be freshly plowed. The finds of Mr. Wertz present many interesting features when compared with those made below the plow line by our survey. Specimens of grooved stone axes found on the surface were not met with in any part of the village below the plow line; pestles found by Mr. Wertz were not found by our survey, yet we were able to find many excellent examples of mortars and flat stones used in preparing meal; specimens made of cannel coal were abundant in Mr. Wertz's collection, especially the effigy canines of the various carnivora, but below the plow line not a single specimen of cannel coal was found; again the survey found but few pieces of cut and decorated shell ornaments but Mr. Wertz found many such.

Mr. Wertz also found numerous pieces of copper, on some of which an attempt had been made to destroy their identity by hammering the finished product into a mass. The finding of the masses of bent and battered copper implements by Mr. Wertz led me to make the examination to determine, if possible, whether the Feurt peoples were contemporaneous with the Tremper mound peoples just across the river.

Only two burials showed friendly contact with some tribe of the Hopewell culture. One of these was a splendid necklace made of shell and copper beads, and the other a necklace consisting of bear teeth, and imitation bear teeth made of wood and covered with copper. However, Mr. Wertz found a number of copper pieces corresponding in type to those found in the Tremper mound which were hammered and bent out of semblance and resembling in many respects the cache of copper implements and ornaments found at Ft. Ancient. The specimens found by Mr. Wertz were taken from the edge of the bank where refuse from the village was dumped and where doubtless they were thrown away after being captured and their identity destroyed. The specimens found by our survey were no doubt secured by barter, and were very likely highly prized.

EXPLORATIONS MADE BY PROF. MOOREHEAD.

During the year 1896, Prof. Moorehead, on behalf of the Society made a very limited examination of the three mounds. His report appears in vol. 5 of the Society's publications, as follows: "The afternoon of the 13th (July) we went up the Scioto five miles to Mr. Feurt's farm, where there are three mounds and an extensive village site. We opened the smaller mound and dug the large ones the following day. They are located upon the second terrace. The small one is two by twenty-five feet, the next four by fifty feet, the largest six by sixty feet in size. See Figure XV. The village site must cover at least five acres. Many interesting specimens were collected from it, while the men dug, by Cowen, Loveberry and myself.

"The mounds are all sand and gravel. This is rather unusual. The burials numbered five in the smallest, nine in the

next and 19 in the large one. No relics save mussel shells accompanied the remains. The pottery of the village site is very like that found along the Ohio. We find a difference in the character of the pottery after reaching Higbys in Ross county as one ascends the river. It may be that all the people from Higbys or Waverly on down used different clay, different forms, or were another tribe. Future study will determine that.

"Mr. Feurt's farm is five miles up the Scioto on the east bank and seems to have been a remarkable village site. Field searching resulted in the finding of many pottery fragments and other material common to village sites. The pottery is peculiar to the lower Scioto and Ohio river valleys. There is no mica or copper found.

"In the mounds there were more burials above the base line than upon it, yet the place does not seem modern, for no European relics were found. Nearly every skeleton was doubled up, lay in every direction and several were on top of each other. Some were found within ten inches of the surface, but this is due in part to long cultivation lowering the height of the mounds.

"Some war points were found between the ribs of a skeleton and several awls and needles lay near the heads of three skeletons. One skeleton was that of an old man whose teeth were worn away.

"Nine feet below the surface was found charcoal in the large mound. This was followed to near the edges and yielded nothing as usually is the case with charcoal layers. The excavation in the large mound was thirty-five by twenty feet. There was a layer of ashes above the charcoal. Sand above this to top of mound. None of the others were stratified."

EXPLORATION OF THE MOUNDS.

On the 5th of July, 1916, was begun the present exploration of the Feurt mounds and village site. The examination had as its purpose the exposing to view of unexplored portions of the three mounds, comprising the group, and certain parts of the village site surrounding them; the recording of all finds both in the mounds and village site and the photographing of all im-

portant features in connection with mortuary customs; to determine, if possible, whether or not the Feurt inhabitants were contemporaneous with the Tremper mound peoples on the opposite side of the Scioto; and to compare the mortuary customs and artifacts found with the dead and in the village site with other sites of the same culture previously explored in Ohio and Kentucky.

The surveyor of the party, Mr. Hugh L. Waugh, made a complete survey of the mounds and the village site and prepared a topographic map, which is shown as Fig. 1. He then established secondary traverse points around the mounds and in the village site, and from these located the various finds both in the mounds and the village site, and from his notes prepared Fig. 2, which shows the amount of the village site dug over.

Mound No. 1.

Mound No. 1 is the smallest of the three mounds, having a maximum length of seventy-five feet, a maximum width of sixty feet, and height at the center of two and three-fourths feet. From this mound 102 burials were removed by our survey. According to his report, Mr. Moorehead took from the center of the mound five skeletons, making a total of 107 skeletons buried in this small mound.

The mound was begun by placing bodies upon the original surface and then carrying earth from the surface nearby and covering them over. The soil used for covering the bodies was frequently filled with animal bones, and often implements and ornaments were present, showing that the earth had been gathered up from around a tepee site. This condition prevailed throughout the mound.

Of the 102 burials, seventy-three were adults, eleven adolescents and eighteen children. The adult and adolescent burials were practically all flexed and only a single instance was found where the body had been extended at full length. Fourteen burials were of special interest and will be described.

Burial No. 4 had trunk lying on right side with shoulders slightly elevated, head on chest, humeri alongside the trunk, the

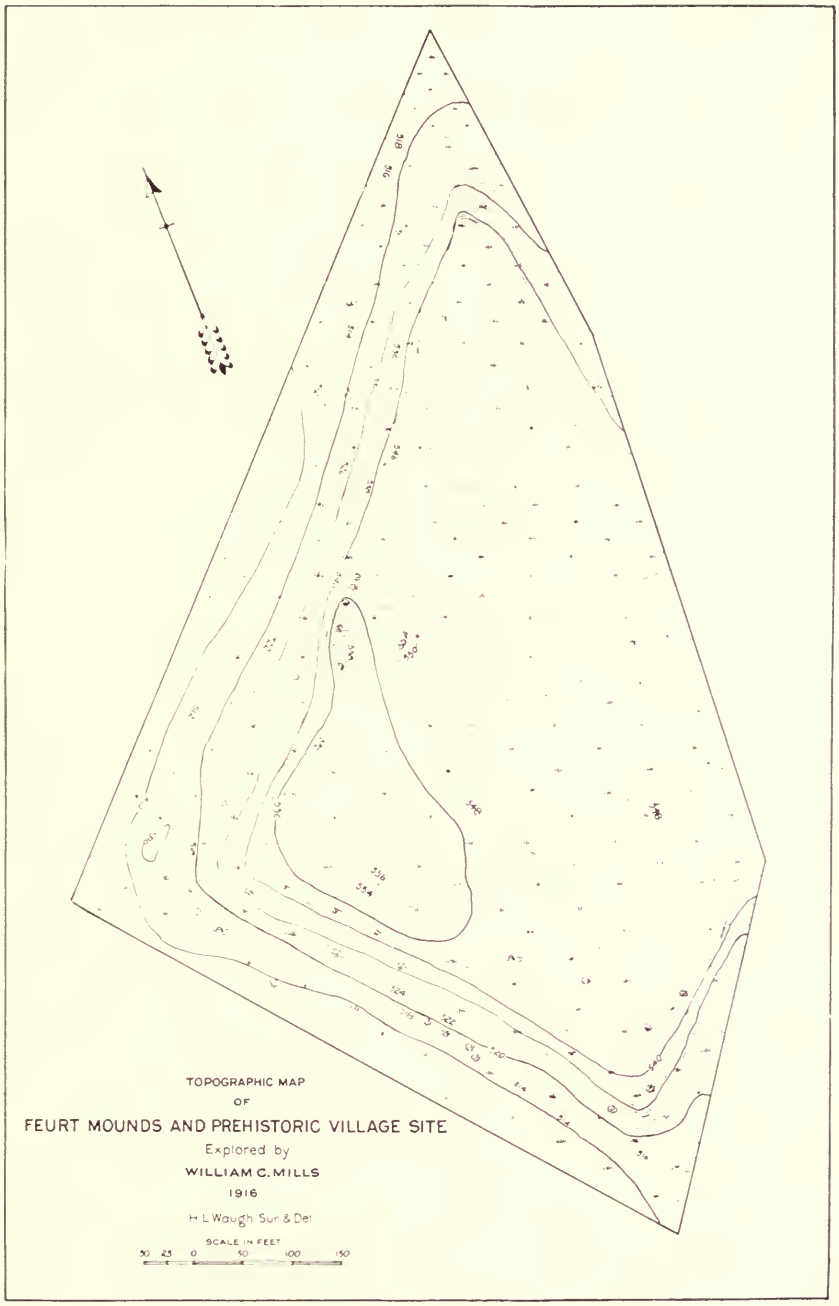
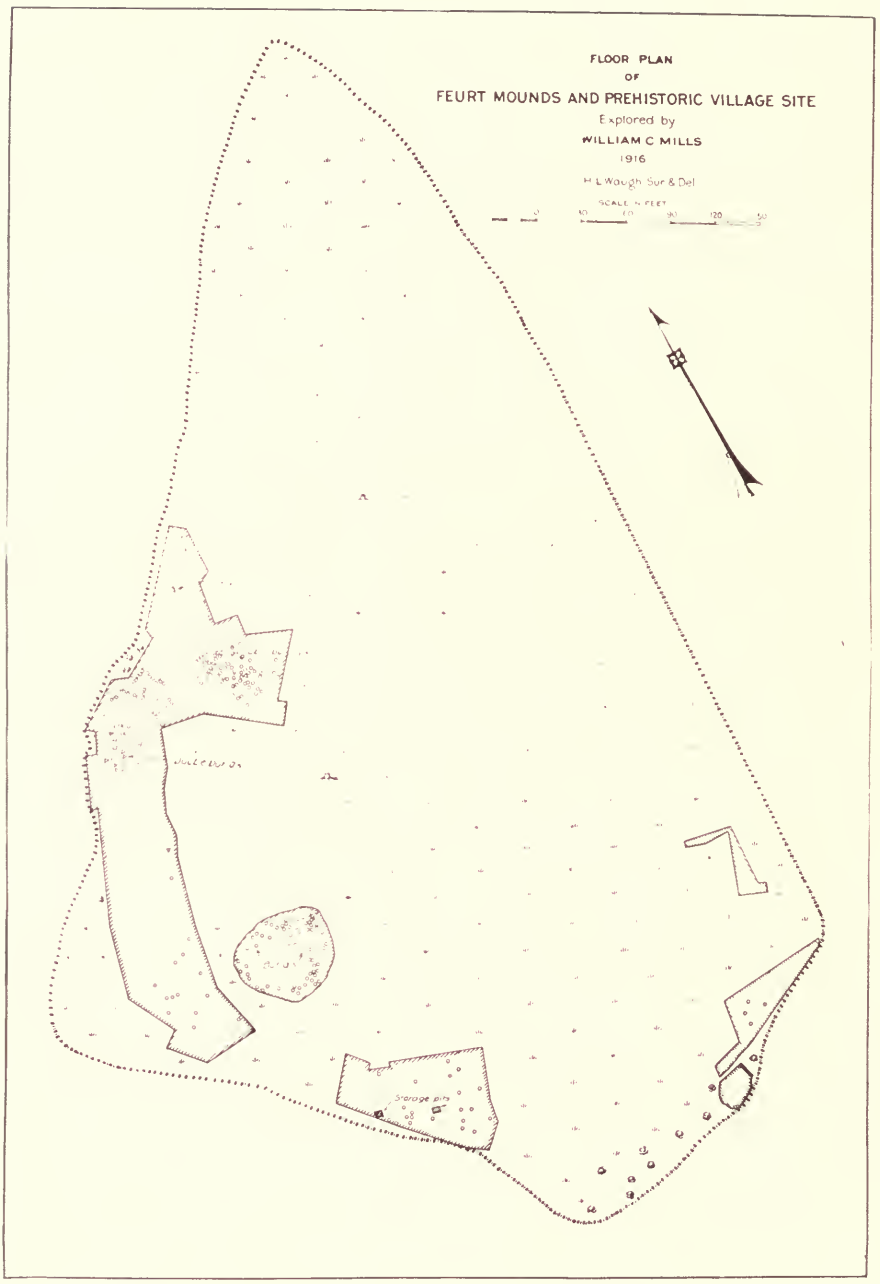


FIG. 1. Topographic map of the Feurt mounds and village site. (11)



(12) FIG. 2. Floor plan of the Feurt mounds and village site.

elbows at the pelvis, the femurs vertical, with the lower leg bones closely flexed against them. The tibias were greatly enlarged, showing a diseased conditon. Upon the chest was found a large molar from the lower jaw of the elk. One of the roots of this tooth was perforated for attachment. The tooth is shown as No. 1 of Fig. 87.

Burial No. 24 comprised only parts of a skeleton, the skull, with lower jaw widely separated from it, and the right leg, complete, being the bones present in the grave. Associated with

Fig. 3. Part of human skeleton buried with animal and bird bones.

these parts was the skull of a very large black bear and the pelvis of a wild turkey. The burial is shown in Fig. 3. There seems to have been no disturbance of the bones after they were placed in the grave and no evidence is forthcoming to determine why only a part of the body was buried, and these parts associated with animal and bird bones.

Burial No. 25 lay on its left side, the skull bent forward resting upon the chest; the right humerus lay alongside the trunk while the left lay beneath the body with the forearm and hand near the face. The legs were closely flexed to the trunk with the feet resting near the pelvis. The burial is shown in

Fig. 4. A long and slender arrow point that had pierced the body, plainly indicates the tragic death of this individual. The arrow entered the body from the left side, striking the seventh rib and cutting its way through the bone, the point being found in the region of the heart.

Another arrow entered the body from the right side, striking the arm bone near the socket joint, no doubt while the individual

Fig. 4. Burial showing the effect of two arrow wounds.

had his arm raised, in the act of striking a blow with an axe, or was in the act of using his bow and arrow. This wound probably would have caused death by severing the circumflex arteries. The arm bone containing the arrow point firmly embedded in the bone is shown in Fig. 5. The bone presents no indication of repair.

Burial No. 28 was the largest individual taken from the mound, measuring six feet and five inches. The skeleton was

that of a male of mature years which had been placed in the grave on the left side, both arms flexed in front of the body, and the lower leg bones flexed to the back of the femurs. The burial is shown in Fig. 6. Near the pelvis was found a few

FIG. 5. The arm bone showing the arrow point in place.

serrated arrow points and beneath the trunk were two well-wrought bone awls.

Burial No. 33, adult female; placed on left side, arms flexed to trunk, hands in front of skull, femurs flexed closely to the

trunk, with lower leg bones drawn closely to them. The body had been wrapped in bark and the grave lined on sides and bottom with a coarse bark.

Burial No. 58; adult female, placed in center of mound.

FIG. 6. Burial showing the largest individual found in the village.

The arms and legs were closely flexed to the trunk. At the foot of the grave, flat sandstones, approximately eighteen inches long by twelve inches wide were placed on edge, and formed one end and part of one side of the grave. This was the only instance

in which stones were used in the mounds of this group, although the use of flat stones for sides and ends of graves is a common occurence in this culture, in southern Ohio.

Burial No. 67; child, about ten years of age, placed two feet from the surface of the mound; head bent forward upon the chest. A necklace, made of ten perforated canines of the black bear, was found around the neck.

Burial No. 72; adult male, lying on right side with the arms and legs closely flexed to the body. Near the right elbow were found three well-wrought serrated arrow points.

Burial No. 75; child of perhaps seven years of age. The body was placed on its left side and the arms extended parallel with the body, but the legs were flexed closely to the body. The head was surrounded by fine gravel and sand. Around the neck was a necklace made of a perforated canine of the gray wolf, three effigy bear canines, made of wood and covered with copper, and a large shell gorget. Fig. 7 shows the shell gorget and the effigy teeth.

Burial No. 84; child, of perhaps five years. The burial was twelve inches from the surface and was no doubt disturbed by recent plowing, as the bones were badly broken. The grave was practically round, and the arms and legs were closely flexed to the body. A necklace made of small shells (Marginella apicina) was found around the neck.

Burial No. 85; adult male, flexed on right side. Around the hips was the remnant of a belt, to which were attached parts of the lower jaw of the gray squirrel. (Sciurus caralinensis).

Burial No. 86; adult male, with enlarged tibia.

Burial No. 94; adult male, arms horizontal with trunk, the lower extremities closely flexed and slightly to the right. A fine necklace, made of shell and copper beads strung alternately, was found around the neck.

Burial No. 97; adult male, near north side of mound; skeleton flexed, on right side. Two large shell discs, perforated at the center and having a diameter of one inch, were found around the neck. The left tibia and fibula were stained with copper, but the object, whatever it may have been, had long since changed to the carbonate of copper.

FIG. 7. Shell gorget, and imitation bear teeth, made of wood and covered with copper.

Mound No. 2.

After the first mound was finished, our working force having increased to eleven men, I decided to divide the men, and placed six with H. C. Shetrone, my assistant. With these workmen, Mr. Shetrone examined the second mound of the group. With the other five men, I commenced the examination of the village site on the south side of the plateau and not far from the third mound of the group. Mr. Shetrone during his examination of Mound No. 2, secured 137 burials. Of these 121 were adults, ten adolescents and six children, and all were placed in the grave with the arms and legs more or less flexed to the body.

Mound No. 2 was the highest mound of the group, and was located near the west edge of the plateau, about one-fifth of the mound having fallen down the embankment. The actual measurements show the mound to be ninety feet north and south, forty-five feet east and west and about eight feet high. On the north and east sides of the mound the burials were very close together and were arranged in four tiers. Near the center of the mound, as shown by the absence of burials (Fig. 2), is where Prof. Moorehead removed nine skeletons. The south side was again very plentiful in skeletons, as shown in Fig. 2. Burials were also found below the base line. A photograph is shown of a cut in this mound showing a burial below the base line, Fig. 8, as well as burials at various heights in the mound.

One of the interesting features as shown by the burials in this mound, was the absence of artifacts placed with the dead, for only four burials of the 137 had any objects placed in the grave. This condition is very unusual in this culture, for, while graves are seldom prolific in artifacts, a few objects are frequently placed with the dead.

Burial No. 5; adult male, arms and legs closely flexed to the body. This burial was forty-two inches deep. Near the right arm were two very finely chipped arrow points of the triangular type. The points were so placed as to lead one to believe they were attached to arrow shafts when placed in the grave.

Burial No. 6; adult male, legs closely flexed to the body, right arm parallel with body, left arm flexed. Near the pelvis

was found an excellent example of the triangular serrated arrow point, three inches in length.

Burial No. 9 was that of an adult male. The body was flexed and lay on its right side. Near the left arm was found a slender bone awl, six inches in length. The awl is made from very heavy bone, presumably the leg bone of the deer. The implement is about one-fourth inch in diameter, square at one end, with a small crease around the bone, and the other end tapering to a fine point.

FIG. 8. Burials shown at various heights in mound No. 2.

Burial No. 43; adult male, the legs and arms flexed closely to the body. The posterior portion of the skull was partly crushed and badly decayed, and within the skull cavity was found a triangular arrow point. From the general position of the point in the cavity of the skull and the position of the skull with reference to the crushed part, one must believe the arrow did not drop into the cavity, but that it was very likely the fatal shot causing the death of the individual.

Mound No. 3.

The third mound of this group was interesting as showing that a dozen or more bodies had been buried elsewhere and finally brought to the mound and reburied. This was evidenced by the absence of parts of the body, such as head, arms or legs, the burials showing no trace of disturbance after having been placed in the grave. Another interesting feature of

FIG. 9. Tepee fireplace found in mound No. 3.

this mound, was the finding of the fireplace of a tepee site on the base line or floor. The fireplace is shown in Fig. 9, and contains charcoal and pieces of various broken vessels made of clay. No burials were made within the tepee proper, but several were found directly above the site.

Another very interesting feature is the finding of several double burials where two bodies were placed together in the

same grave. One of these double burials, shown in Fig. 10, is an excellent illustration of the general appearance of the skeletons in practically all of the double burials. In that shown, however, in Fig. 11, the bodies were flexed and placed one above the other at right angles. The four skeletons shown in Figs. 10 and 11 are adult males.

Mound No. 3 was six feet high, ninety feet north-and-south diameter, and 112 feet east-and-west diameter. It was constructed of soil taken from the surface, and contained 101 burials. Of these thirty-seven were adult males, nineteen adult females, ten adolescents and fifteen children. Of the 101 burials, something less than twenty will be described.

Burial No. 8; adult male, placed in the same grave with No. 4, a young adult male. The body was closely flexed upon the right side. Around the neck was a necklace made of bone beads cut from sections of the wing bones of large birds like the eagle and blue heron. The beads comprising the necklace were nineteen in number, about one-half inch in diameter, from one and one-half to two inches in length, and highly polished. This necklace is shown as No. 1, in Fig. 12, the smallest of the four necklaces shown.

Burial No. 13; adult male. The skeleton was in a good state of preservation. The body had been placed in the grave closely flexed, with the exception of the right arm, which lay parallel with the body. Around the neck was found a necklace of bone beads composed of twenty-three large and polished sections cut from the wing bone of birds like the eagle and crane. The necklace is shown in Fig. 12, No. 2. Many of the individual beads are decorated with incised circles and all are highly polished. Near the left arm was found a fine example of an arrow point made of antler.

Burial No. 14; adult male, very old. The lower legs were flexed to the femurs, and both arms were so flexed that the hands covered the face. A shell hoe made from Unio plicatus, was found with this burial.

Burial No. 23; adolescent, body closely flexed, and the skeleton in fine condition. Around the neck was found a neck-

FIG. 10. Double burial, mound No. 3.

FIG. 11. Double burial, mound No. 3.

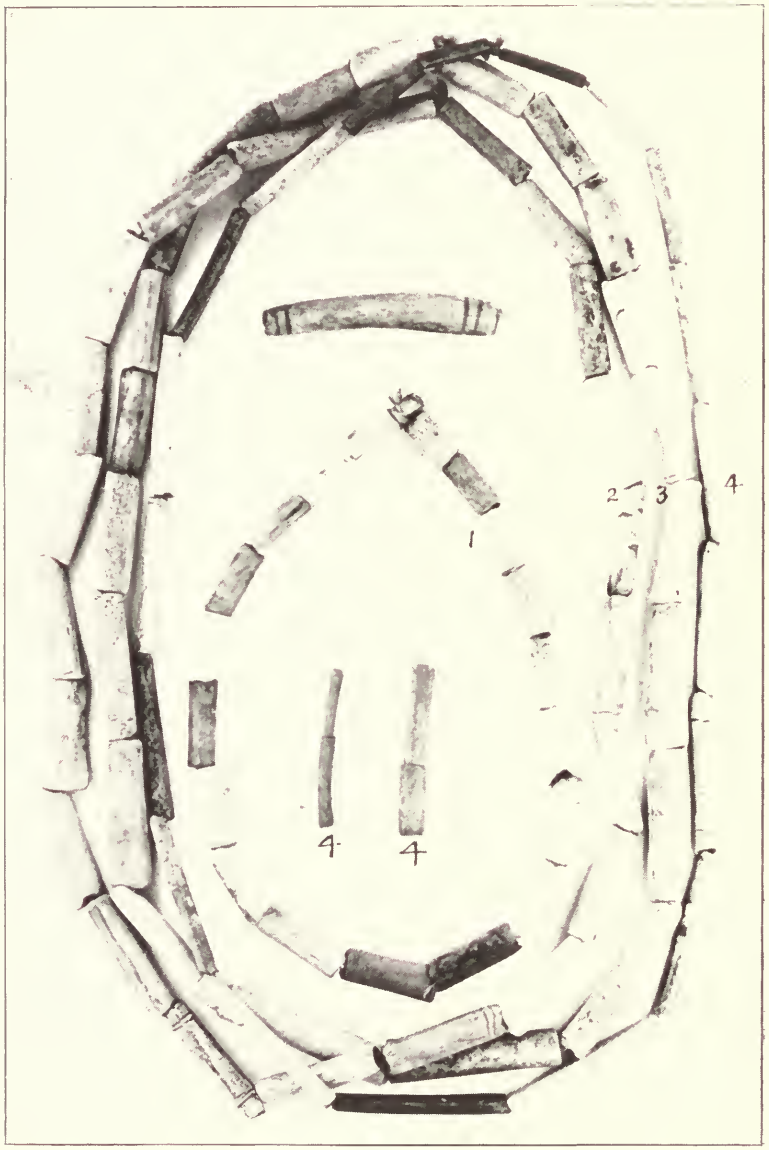


FIG. 12. Necklaces taken from various burials.

lace made of forty marine shells (Marginella apicina). This necklace is shown in No. 1 of Fig. 13.

Burial No. 28; adult male. The body was placed in the grave lying on the back, with the legs flexed in front, and the arms to the side of the body. Around the neck was found a necklace made of shell beads, twenty-two in number. The necklace is shown in No. 2, Fig. 13, and was made of two different kinds of shell beads, round and oblong.

Burial No. 29; adult male, legs and arms closely flexed to the trunk, and the skeleton in a fine state of preservation. Around the neck of the skeleton was found a very large necklace of bone beads made of the wing bones of large birds. The beads varied in length from one and one-half inches to two and one-half inches and were highly polished. The necklace is shown in Fig. 12, No. 3. Beneath the skull was found a large bone awl, six and one-quarter inches in length, made of the heavy bone of the deer. The awl is round in cross section and undecorated, and was perhaps used as a hair pin or ornament.

Burial No. 31 was that of a child. The burial was near the surface and the plow had partly disturbed the remains. A necklace of shell beads was found around the neck. The necklace is shown in Fig. 13, No. 3.

Burial No. 33; adult male. The body had been placed in the grave upon the left side; the legs were closely flexed to the trunk. The right arm lay parallel with the body and the left arm at right angles to the body. A very large necklace made of forty perforated canine teth of the mountain lion and the gray wolf was found around the neck. The necklace is shown in Fig. 14. Many of the teeth are decorated with incised lines.

Burial No. 38; adolescent. The burial was near the plow line and a part of the skeleton was destroyed and the remainder badly broken up. The body was flexed when placed in the grave and a necklace consisting of four perforated Olivella shells was placed around the neck. The shells are shown in Fig. 15, Nos. 1, 2, 3 and 4.

Burial No. 40; adult female, body flexed, with the exception of one arm which lay parallel to the body. Under the skull was found a large bone awl, neatly made and highly polished, per-

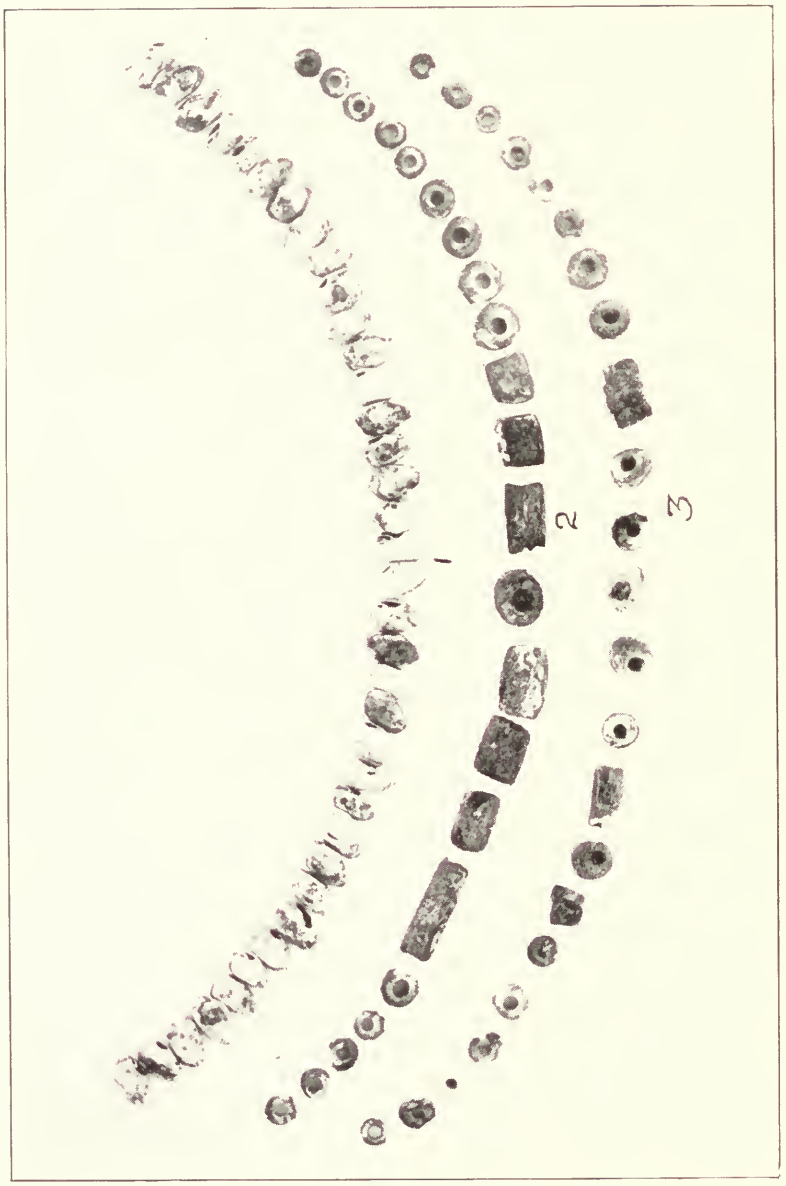


FIG. 13. Necklaces made of shell and bone, taken from the burials in mound No. 3.

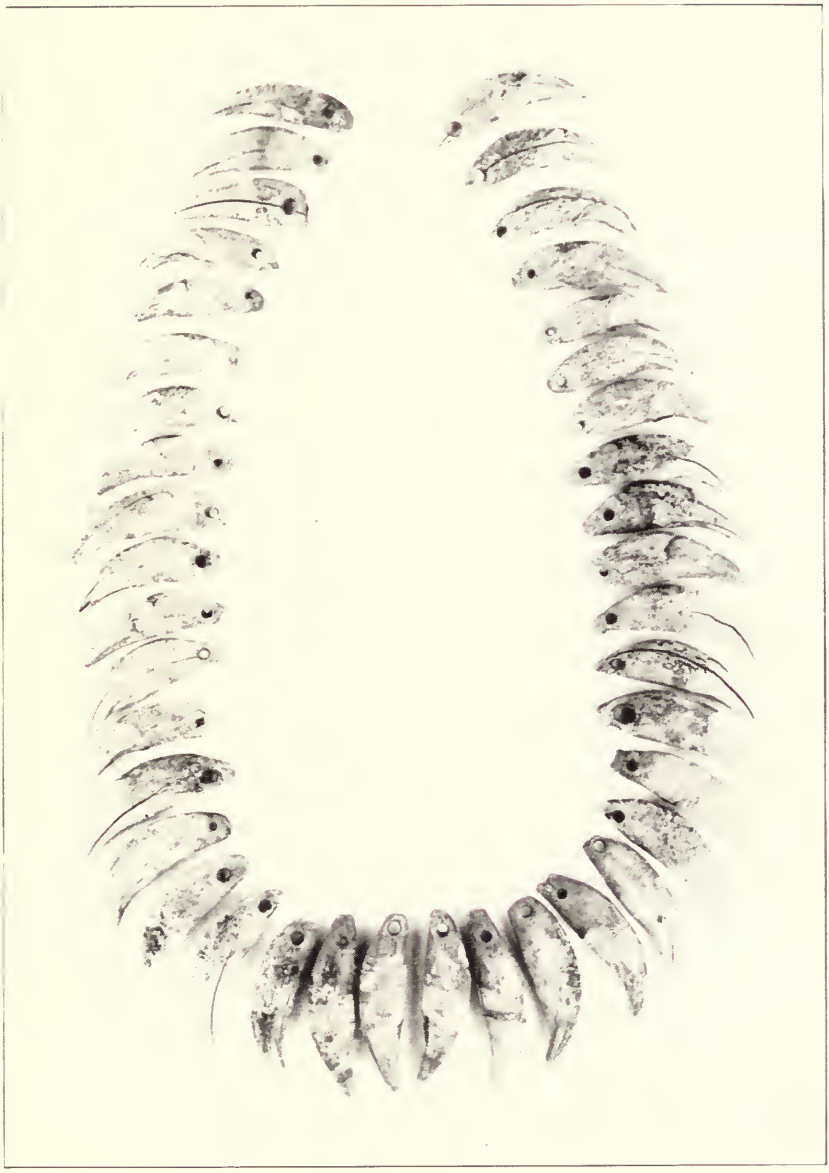


FIG. 14. Necklace made of canine teeth of the mountain lion and gray wolf.

Fig. 15. Ornaments made of shell.

haps used in the hair. The awl was six and one-quarter inches in length, round at one end and having a spatula-like enlargement at the other.

Burial No. 48; adult male, legs flexed at knees and arms flexed to face. Near the pelvis was found a fine stone celt and around the neck was a necklace of bone beads, as shown in No. 4 of Fig. 12. This necklace is made of small wing bones of hawks, owls, wild ducks and geese and therefore very irregular in size. Some of the small beads have been telescoped by the large ones, this condition being shown in No. 4 of Fig. 12.

Burial No. 49 was that of a child, and was placed one foot under the surface, the bones of the small skeleton being badly decomposed. Upon the breast was found three circular disk-like beads perforated at the center, about one-half inch in diameter, and a small pendant of shell. The beads are shown as 9, 11 and 12 of Fig. 15, and the pendant as 14 of the same figure.

Burial No. 77 was also a child. The skeleton was in very good condition and the bones for the most part were in a good state of preservation. With this skeleton was found a perfect triangular arrow point. The point had evidently been attached to an arrow, from the position in which it lay in the grave. With the point was also a large bone awl made from the tarso-metatarsus of the wild turkey. While bone awls of this sort were found in very large numbers in the general digging of the mounds and village site, this is the only one made of this bone found intentionally buried with the dead.

Burial No. 94; adult male. The legs and arms were closely flexed to the trunk, and the body was lying on the right side. On each side of the head was a small disk-shaped bead, one inch in diameter which may have been used as ear pendants. One of the discs was pierced with one hole at the center, while the other had three perforations surrounding the center of disk; one of the holes is very small, while the other two are larger and about the same size. Around the neck was suspended a shell disk one inch in diameter. A large hole, one-quarter inch in diameter, pierced the shell at the center, while a small hole for its suspension was near the outer edge of the disk. The discs are shown in Fig. 15, Nos. 6, 7 and 8.

Burial No. 95; an adult female. The arms and legs were closely flexed to the trunk. Near the left arm was found a well-wrought arrow point, lying parallel with the arm.

Burial No. 97; adult male skeleton, closely flexed. Near the pelvis was found a large bone awl made of a splinter of the heavy leg bone of the deer. The length of the awl is five and three-quarter inches.

THE VILLAGE SITE.

The examination of the village site was begun by the writer with a force of 5 men, after the first mound was finished and the examination continued during the remainder of the time devoted to the work at the Feurt farm, except for a short time consumed in examining the third mound. The amount of the surface of the hill examined is shown in Fig. 2. This village proved of exceptional interest when compared with other explored sites of the same culture (Fort Ancient culture) in Ohio and Kentucky.

In Ohio, the Baum village site was explored by the writer during three seasons in the field, 1899, 1900 and 1902. The site is located in the Paint Creek valley, Ross county, Ohio, and lies about 12 miles west of Chillicothe. The report of Baum explorations is found in Certain Mounds and Village Sites in Ohio, Vol. 1, pt. 3, and will be referred to in this report as Baums'.

The Gartner Mound and Village Site is located six miles north of Chillicothe along the Scioto river and is described in Certain Mounds and Village Sites in Ohio, Vol. 1, pt. 2, and will be referred to as Gartners'. The Kentucky site, written up as "The Prehistoric Ethnology of a Kentucky Site," is located in Mason County, Kentucky, about 14 miles southwest from Maysville. The site was explored by Harlan I. Smith in 1895 and his report published in Anthropological Papers of the American Museum of Natural History, New York, in 1910, and will be referred to as the Kentucky site. The three sites mentioned above are about of equal distance from the Feurt site and would fall within a fifty mile circle of the same.

From the very earliest settlement of the lower Scioto the Feurt site was noted on account of the mounds, but after Mr. Feurt's father cleared the land and placed it under cultivation, it

became apparent that the entire spur of the hill, shown in Fig. 2, was at one time a great camp site, as evidenced by the profusion of animal bones, mussel shells, implements and ornaments turned upon the surface after each successive plowing, thus forming a mecca for collectors of prehistoric objects. One of the most interested of the collectors in this vicinity was Mr. Charles V. Wertz, previously mentioned, who has kindly placed his collection at my disposal. This collection shows many forms of artifacts not found under the plow line and therefore is of special interest in comparing the artifacts from the various village sites.

The present extent of the village site is not far from four acres, but formerly the tableland extended much farther out into the valley and its extent when occupied by early man would perhaps be nearly five acres. Under the surface soil of the plateau containing the village site, is found an excellent quality of gravel, which for more than half a century furnished the road building material used in constructing the pike for many miles both north and south of the Feurt farm. Day after day at the season of the year when road building and repair was in progress, as the gravel was removed from beneath, the top soil containing the artifacts would cave off and fall down to the bottom of the bank. The various objects, frequently broken, were gathered up by gravel haulers and by those interested in collecting, but the great bulk of artifacts were mixed with the gravel and scattered on the road, soon to be destroyed. Consequently, an acre of rich-laden soil, containing the very best material of the site, was practically lost to science. However, on the south side of the spur, the plateau had not been disturbed, and as Mr. Feurt would often say, "this condition prevailed at the point where the gravel was removed," and from this information, I feel assured had we been able to examine this part of the village that many more objects of special interest would have been brought to light.

As before stated our object in making the examination of the village was twofold. First, to determine if possible whether or not the Tremper mound peoples living on the opposite bank and belonging to the great Hopewell culture, were contempora-

neous with the Feurt peoples, belonging to the Fort Ancient culture, and if so whether or not the two cultures differing so widely could live in peace in such close proximity, separated only by the Scioto river, and its accompanying valley; second, a comparison of the Feurt peoples with similar known sites in Ohio and Kentucky.

RESULTS OF THE EXAMINATION.

Before beginning work in the village site, I had fully satisfied myself by a superficial examination that the Feurt peoples belonged to the great Fort Ancient culture, characterized by the mode of burial of the dead in mounds; by the fact that the mounds in this culture are seldom surrounded by an earthwork; by the entire absence of copper objects made by themselves; and by the almost total absence of the use of mica for ornament. The Fort Ancient culture peoples depended upon the chase for a part of their living, and from the bones of the animals they killed for food they made implements and ornaments to supplement those made of stone and flint. They also developed agriculture, for every village of this culture examined produced many specimens of the cereal corn.

The Hopewell culture, to which the Tremper mound peoples living on the opposite bank of the river belong, were characterized by a very different mode of burial, the dead for the most part being cremated and the ashes and charred bones placed in individual or communal graves; by the presence of copper implements and ornaments in great numbers; and by the making of objects of personal adornment in imitation.

For instance, if the supply of pearls did not equal the demand, they made them out of clay and covered the fashioned pearl with mica, rendered malleable by heat, or if the supply of bear teeth was not adequate, they simply made them of bone. These imitation bear teeth — and the same is true of the imitation eagle claws and other forms — varied in size from that of the natural object, to a much larger size, representing a mythical animal or bird.

The development of sculpture in the Hopewell culture is quite marked, this appearing particularly in the decoration of

their tobacco pipes, in the realistic portrayal of bird and animal life, sculptured in full relief and fashioned in minutest detail. They also excelled in the art of weaving, as well as in ceramics.

The fashioning of awls from the tarsometatarsus of the wild turkey was entirely different in the hands of the two cultures. The Feurt peoples would use the entire bone, while the Hopewell would split the bone and make two awls instead of one; again the Feurt people in making a needle would use a flat and long bone, with an eye at one end, and sharp pointed at the other, while the Hopewell peoples in making their needles would use a strong, heavy but small and short bone, round in cross sections, an eye near one end and the other end sharply pointed. Accordingly, with such known facts concerning their artifacts, one can readily distinguish between the cultures inhabiting a given region. If an exchange of commodities were made no doubt the object, whether implement or ornament, was converted to their use, but if an object was secured in battle, it was frequently destroyed or broken up and then cached or thrown away. Here we find a friendly contact in the copper bead necklace and the imitation bear teeth, covered with copper, neither of these objects being made by the Feurt peoples, but who certainly wore objects secured in barter from a culture versed in working copper. Further, during Mr. Wertz's various examinations of the Feurt site he secured from the edge of the bank several objects of copper that had been thrown in the refuse pile of animal bones and broken pottery. The various objects of copper had been hammered together and the identity of the object destroyed, and I have been led to believe that these objects had been captured as a prize from an enemy and disposed of as such.

Therefore, upon the testimony disclosed by our explorations and the finds of Mr. Wertz, we must conclude that the Feurt peoples for a period of time were living in peace with their neighbors across the river, — the Tremper Mound peoples, as evidenced by the change of commodities; that later the two peoples became involved in conflict, this being borne out by the finding of skeletons pierced with arrow points, and by the

finding of copper objects of the Tremper peoples in the refuse dumps of the Feurt peoples, with unmistakable signs of their having been mutilated.

EXPLORATIONS IN DETAIL.

The greater part of the village was examined under my direction, although Mr. Shetrone, with his six workmen examined that part of the village north of mounds No. 1 and 2, where he unearthed fourteen burials and ten tepee sites. The second squad of workmen, under my direction, working on the south and west sides of the plateau, unearthed forty-nine burials. Twelve of the burials were adults, three of which were male and nine female, and the remaining thirty-seven were very small children and babies.

THE VILLAGE BURIALS.

The fourteen burials unearthed by Mr. Shetrone north of mounds No. 1 and No. 2 consisted of ten adults, four of which were male and six female, and four adolescents. All of the bodies were flexed when placed in the grave. Three burials out of the fourteen had objects in the way of ornaments placed with them, and these will be described.

Burial No. 3; adult female. The burial was only about 12 inches deep, and being subjected to freezing and thawing, trampling by livestock and disturbed by cultivation, practically no part of it could be saved. At and around the left knee was placed a large strand of shell disc-shaped beads, numbering 180. These are shown in Fig. 16.

Burial No. 6; adult male. The body when placed in the grave was flexed, the arms over the head and the legs drawn up close to the body. A shell necklace was found on the neck which consisted of five disc-like beads, one-half inch in diameter; two cut pieces of shell and eight long beads made of the columella of an ocean shell. This necklace, one of the most interesting found in the village is shown in No. 1 of Fig. 17.

Burial No. 10; adolescent. The body was flexed and the skeleton badly decomposed. Around the neck of this individual

FIG. 16. Necklace of shell discs, taken from burial No. 3, found in the village.

FIG. 17. Necklace of shell and copper beads found in the village site.

was found one of the finest necklaces taken from the village. It is made of both copper and shell. The copper was hammered into small tubular cylinders about one-half inch long, which were alternately strung with small shell beads, as shown in No. 2 of Fig. 17.

The burials on the south and west side of the village site numbered forty-nine individuals, only one of this large number having artifacts placed in the grave, — that of a small child less than one year of age.

As before stated out of the forty-nine burials in the village only twelve were adults, three of which were males and nine females.

All of the males were aged individuals, while the females mostly were old, with however several who had not reached middle life. The remaining thirty-seven were very small children or babies.

LOCATION OF THE BURIALS WITH REFERENCE TO TEPEE SITES.

The adult burials for the most part were not placed in close proximity to the tepee site in this respect, differing greatly from the village site burials at Baum's, where practically all of the burials closely surrounded the tepee site, representing a family private burial where both adult male and female, together with adolescents and children were found. The same conditions prevailed at Gartner's. Smith mentions no family burials at the Kentucky site. However, he found "the dead were deposited in the ground in graves, many of which were grouped, each group being covered by a low dome-shaped mound." Smith also found that many graves had slabs of stone at the sides and ends of the grave and some had slabs over the top.

The conditions existing at Feurt's were certainly similar to those of the village site burials of the Kentucky site, and no doubt slabs of stone would have been used had they been available. At the Tremper mound on the west side of the river directly opposite Feurt's intrusive burials of the Ft. Ancient culture were found in the top of the mound in which slabs of stone were used, as the slabs were available near the mound.

On the east side of the river slabs of stone are not procurable in the immediate neighborhood of the Feurt side.

A very interesting phase of the Feurt site burials was the finding of so many children and babies. These burials were confined to the west side of the village site and all were placed in close proximity to tepee sites, resembling in many respects the burials at Baums' and Gartners'. The thirty-seven burials were attributed to 21 sites; ten sites having one burial each, six sites having two burials each, three sites having three burials each, and one site having four burials. With only one of the thirty-seven burials were objects placed in the grave, which was that of a small child not more than six months of age. Around its neck was placed an elegant necklace of beads made of the columella of ocean shell, with a pendant in the form of a decorated shell gorget. The necklace is of special interest, as being buried with a child too young to understand and appreciate its decorative features. Possibly the mother in her bereavement bestowed upon her beloved child her finest ornament, permitting it to be placed with the body when it was lowered in the grave.

The decorative feature of the shell gorget of this necklace is of interest, since it is the only decorated gorget found in the village. The specimen is circular in form, three inches in diameter and decorated on the edge with scalloped indentations. One-fourth inch from the edge an incised line encircles the gorget, while between this incised line and the edge small circular indentations appear. The center bears the incised figure of what probably is intended as a spider. The gorget is pierced with two holes near the edge, and with one hole at the center. The necklace is shown in Fig. 18.

TEPEE SITES.

The tepee sites at the Feurt village were in many respects similar to those of Baum's and Gartner's, but lacked a certain air of permanence. At Baum's and Gartner's the poles used in constructing the tepees were large, and the tepee seemed to be more of a permanent abode. At these sites the fireplaces were very often mended many times, while at Feurt's only two instances

Fig. 18. Necklace of shell beads found in the grave of a small child.

were found, one on the south side and one on the west side of the plateau, showing attempts to mend a fireplace. This was done by placing puddled clay in the bottom of the fireplace to fill up the deepened hole, caused by cleaning out the ashes from time to time, which process would incidentally remove a portion of the earth bottom. This condition of impermanence seems to have been due to the absence of the empty subterranean storehouse, to receive the refuse which would naturally accumulate around a primitive home.

Instead of gathering up this refuse, the Feurt dwellers would cover it up with fresh soil, which for some reason apparently they found easier to dig up and carry in than to gather up the refuse and carry it out. Consequently we found a succession of tepee sites, one over the other. On the south side of the plateau the surface had been raised four feet by the process of covering up instead of cleaning up, and in this four feet of surface accumulation were found bones of animals used for food in great profusion, shells of the fresh water mussel and implements and ornaments of bone, stone and shell scattered through the soil, which no doubt had been lost and accidentally covered up.

Some of the tepee fireplaces were well made, one found north of the two mounds and worked out by Mr. Shetrone being almost a circle in form (Fig. 19). This fireplace is two and one-half feet in diameter and had not been in use very long, as the ground in the center was not burned to a great depth. The circular ring forming the fireplace was made of puddled clay tempered with small gravel and broken pottery. In many of the tepee-site fireplaces were found broken pottery in abundance, and in two instances broken pots containing charred corn were found. At Gartner's broken vessels were found in the refuse pits containing charred corn still clinging to the sides of the vessel. The charring of the corn must have been accidental, for no doubt the corn had been placed in the pot to cook and after receiving plenty of water was placed over the fire; but in the meantime, forgotten, the pot became dry, the corn was burned and the pot broken, and all was lost. This accident, while it worked a hard-

ship upon primitive man, tells a mute story of early domestic trouble.

In several of the tepee sites large stone mortars were found, showing that the preparation of meal from corn and perhaps acorns was part of the domestic routine. Smith seems not to have found evidence of the remains of habitations in the Kentucky site, while at all the sites in Ohio the tepee was abundant.

FIG. 19. Fireplace found in the village.

SUBTERRANEAN STOREHOUSE.

The subterranean storehouse previously spoken of as abundant at both Baum's and Gartner's was practically absent from the Feurt site, only two being found. One was cistern-like in form, being small at the top, having a diameter of 20 inches, gradually tapering to an enlarged bottom three and one-half feet in diameter, and having a depth of four and one-half feet. The storehouse was filled with refuse consisting of animal bones, broken pottery and shells of the fresh water mussel, all mingled with soil and ashes.

The second storehouse was small, being about two feet in diameter at the top and two and one-half feet at the bottom, with a depth of about three feet, and was likewise filled with animal remains. I see no explanation for the sparseness of such necessary appurtenances to a village of barbarous Ft. Ancient culture peoples.

The Feurt inhabitants were certainly agriculturists, as evidenced by the finding of charred corn in various parts of the village. Perhaps their storehouses were constructed of wood and built upon the surface. At Baum's two hundred and thirty-four storehouses were examined, and at Gartner's more than one hundred were found. Smith makes no record of these storehouses at the Kentucky site, although corn and cobs were frequently met with.

FOOD RESOURCES.

From our examination of this village, and the evidence surrounding the tepee site, one must infer that the presence of bones of various animals in such profusion is indicative of their use as food and must have been one of the principal sources of supply. The presence of mussel shells, and the bones of fish and turtles in large numbers shows that the river served as their leader for at least a portion of the year. The finding of the bones of the wild duck, wild turkey, hawks and eagles, indicates that all the birds that could be secured also were used for food. The presence of charred corn in so many of the tepee sites as well as the shells of walnuts, butternuts, hickory nuts and acorns found so plentifully in the fireplaces, would indicate their use as food, and the profusion of seeds of the wild cherry, blackberry and wild plum in the fireplaces show that they drew heavily upon these for sustenance.

ANIMAL FOOD.

It is quite evident from the large number of perfect and fragmentary bones of various animals scattered around the tepee sites of the village, and in fact wherever refuse could be thrown, that these represent animals that were used for food. The animals identified were the deer, elk, black bear, mountain lion,

wild cat, raccoon, opossum, beaver, otter, ground hog, muskrat, skunk, rabbit, mink, porcupine, wolf, gray fox, gray squirrel, Indian dog and fisher.

Virginia deer (Odocoileus virginianus) was perhaps the animal most sought for food, as its bones constitute fully fifty percent of all the bones found in the village.

At Baum's the deer constituted fully thirty-five percent of the animal bones of the village. At Gartner's the bones of the deer were equal to all others combined. Smith in the examination of the Kentucky site mentions the Virginia deer among the animals used for food, but does not compare its bones as to numbers with other animals.

Elk (Cervus canadensis) were not abundant in the village, but more plentiful than at either Baum's or Gartner's. The elk was also found in the Kentucky site by Smith.

Black Bear (Ursus americanus) was more plentiful than at either Baum's or Gartner's. Smith found the bear at the Kentucky site.

Mountain Lion (Felis concolor). The bones of this large animal were very often met with and were more abundant than at Baum's or Gartner's; but this animal was not found by Smith at the Kentucky site.

Wild Cat (Lynx rufa). The bones of this animal were not abundant in the village, but at Baum's and Gartner's they were found in numbers. Smith mentions finding the bones of this animal in the Kentucky site.

Raccoon (Procyon lotor). The bones of the raccoon were not very abundant in the village, and in this respect resembled the Gartner site, but at Baum's the raccoon was found in abundance. Smith mentions the raccoon in the Kentucky site.

Opossum (Didelphs virginianus). The bones of the opossum were found in abundance in the village, as they were at both Baum's and Gartner's. Smith mentions this animal as found in the Kentucky site.

Beaver (Castor canadensis). The bones of the beaver were not abundant. Greater numbers were found at Baum's and Gartner's. Only the incisors of the beaver are used for cutting tools and ornaments. The bones, on account of their

form, are seldom used for making into ornaments, consequently they are usually found perfect; but not many were found. Smith mentions the beaver in the Kentucky site.

Otter (Lutra canadensis). Only a few bones of this animal were found in this village, but its remains were plentiful at Baum's though not so many were found at Gartner's. Smith does not mention finding the bones of the otter at the Kentucky site.

Ground Hog (Arctomys monax). The bones of this animal were fairly abundant and resembled the Gartner finds, but at Baum's the bones of the ground hog were especially abundant. They were also found at the Kentucky site by Smith.

Musk Rat (Fiber zibethicus). The bones of the musk rat were not abundant in the village site, but their distribution resembled both Baum's and Gartner's. Smith does not mention the finding of the bones of the musk rat in the Kentucky site.

Skunk (Mephitis mephitica). The bones of this animal were more plentiful in the Feurt site than at either Baum's or Gartner's. Smith did not find the skunk at the Kentucky site.

Rabbit (Lepus sylvaticus). While the bones of this animal were fairly plentiful in the village, I am led to believe that bones of such animals as the rabbit, ground hog and raccoon would be for the most part destroyed by the Indian dog, primitive man's only domestic animal. This is more probable since practically no subterranean storehouses were in evidence for the disposal of the refuse from the village and bones scattered over the surface would be readily accessible to the hungry dogs, as evidenced by the large leg bones of the bear, deer and elk showing that they had been gnawed.

Mink (Putorius vison). A number of lower jaws and portions of broken skulls of this animal were obtained. The mink was found at Baum's and Gartner's. Smith also records the animal from the Kentucky site.

Porcupine (Erethizon dorsatus). The bones of this animal were found in the Feurt site, and might be considered the first record of the porcupine in a prehistoric Ohio village. Although the bones of this animal were found at Baum's, they

had not been properly identified when the published report upon the Baum village was made.

However, a record was made of the finding of the bones of the porcupine at Baum's in my report upon the Tremper Mound. At the Tremper mound the first and only sculpture so far unearthed of this animal was found. The bones were not found at Gartner's and Smith does not mention them at the Kentucky site.

Wolf (Canis occidentalis). The bones of this animal were sparingly found throughout the village, and this same condition prevailed at Baum's and Gartner's the bones not being plentiful but a few being present throughout the village. Smith found the bones of the wolf in the Kentucky site.

Gray fox (Urocyon virginianus). The bones of the gray fox were very abundant in this village as well as at Baum's and at Gartner's. Smith did not find the gray fox at the Kentucky site, but mentions finding the bones of the red fox. In Ohio the remains of the red fox have not been found in any prehistoric village site of record, but the bones of the gray fox have always been found in large numbers in practically all of the sites.

Gray squirrel (Sciurus carolinensis). Found everywhere in the village. The gray squirrel was also present at Baum's, but was not found at Gartner's. Smith did not find the bones of the gray squirrel in the Kentucky site, but found the red or fox squirrel.

Indian Dog (Canis). The bones of the dog were very often met with and resemble the dog found at the Baum site and at Gartner's. Smith did not find the dog at the Kentucky site.

Fisher (Mustela pennanti). The bones of this animal were sparingly found in the village. It was also found at Baum's and recorded from there as the first record of its presence in Ohio. The bones of the fisher were not found at the Gartner site, and Smith does not mention the animal as present in the Kentucky site.

TURTLES USED FOR FOOD.

Snapping Turtle (Chelydra serpentaria). Found abundantly in this village. At Baum's the snapping turtle was present everywhere in the village.

Box Turtle (Cestudo virginea). Found in abundance in the village. The bones were also very abundant at Baum's and at Gartner's. Smith found at the Kentucky site two specimens of turtles.

MUSSELS AND FISH USED FOR FOOD.

Everywhere in the village the shells of the fresh water mussel were found, and these were certainly a great source of food supply. At Baums' the mussel shells were abundant, and at Gartner's the remains of large mussel bakes were found in several instances and these bakes contained many thousands of shells. Smith found the mussel abundant at the Kentucky site.

Fish bones were found everywhere in the village; those identified were catfish, perch, suckers, buffalo, gar and fresh water drum. Bones of fish were found in abundance at Baum's and at Gartner's and Smith found fish bones in the Kentucky site.

BIRDS USED FOR FOOD.

The bones of birds found in the village site were numerous, especially those of the wild turkey, which predominates among bird bones. Others noted were the trumpeter swan, Canada goose, great blue heron, bald eagle, great horned owl and several species of ducks. The bones of various birds were found at Baum's and at Gartner's. Smith found the bones of the great blue heron, wild turkey, duck, owl and eagle at the Kentucky site.

PLANT FOOD.

Corn (Zea mays) was the most important agricultural product raised by the dwellers in the Feurt village, for charred corn was found in many tepee sites and fireplaces in the village. However, as far as noted, only the eight-rowed variety was grown Since but few subterranean storehouses were found, no doubt surface granaries were constructed of wood to care for the supply of corn. The tepee was all too small to store any amount

of food products. At Baum's and at Gartner's it was found that for a time after the grain had been used out of the subterranean storehouses, they were used for the storage of nuts and dried fruit, and doubtless for the storage of meat, both fresh and dried.

The charred corn so frequently found in the fireplaces at Feurts, was due, I am sure to accident, either the spilling of the corn into the fire, or the breaking of the pot in which it was cooked. Fig. 20 shows the lumps of corn taken from the half-broken earthen pots. At the Gartner village site broken earthen vessels were found in the refuse pits with lumps of charred corn still clinging to the sides of the vessel. At Baum's the charred remains of the ears were found in the bottom of the subterranean storehouse, where the ears had been placed in regular order, and at Baum's two varieties were found — an eight-rowed and a ten-rowed variety. The eight-rowed variety found at the Feurt site resembles in every way the eight-rowed variety found at Baum's. The grains of corn, together with the cobs are shown in Fig. 21. Smith at the Kentucky site found an eight-rowed and a twelve-rowed variety. As far as we know, the twelve-rowed variety has not been found in Ohio.

Kidney Beans (Phaseolus vulgaris) were found sparingly in the fireplaces, and were no doubt used for food, as it is well known the kidney bean grew wild over the state, as recorded by the early botanists. Beans were found at Baum's and Gartner's and Smith records the finding of the beans at the Kentucky site.

The presence of the shells of hickorynuts, walnuts, butternuts and acorns in so many of the fireplaces indicate their extensive use for food by the Feurt peoples. All these were found at Baum's and Gartner's except the acorn. Smith found at the Kentucky site only hickorynuts and walnuts.

The charred remnants of wild plum seeds, wild cherry seeds and seeds of the blackberry found in the fireplaces, is evidence that these fruits, of which no doubt the country would produce a bountiful supply, also were used for food in season. At Baum's wild plum, wild grape and the seeds of the papaw were found, while at Gartners' only the seeds of the papaw were

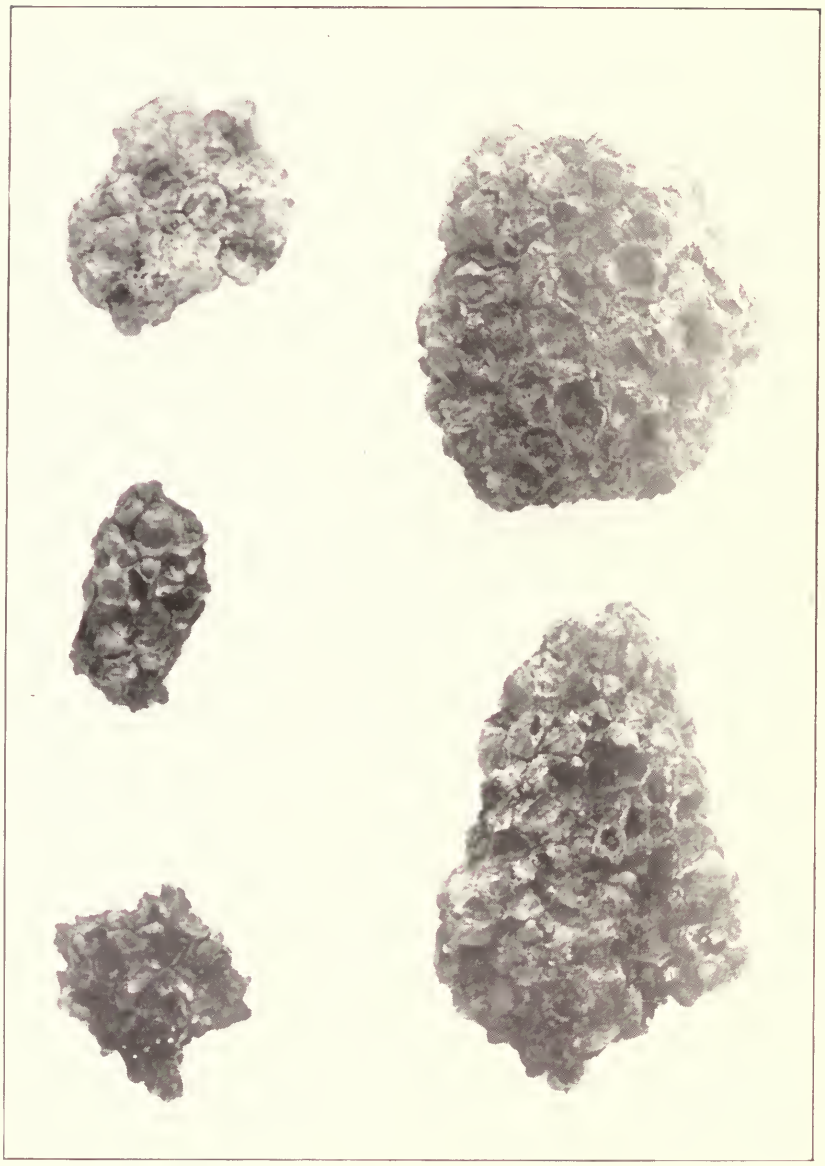


FIG. 20. Lumps of charred corn taken from broken vessels.

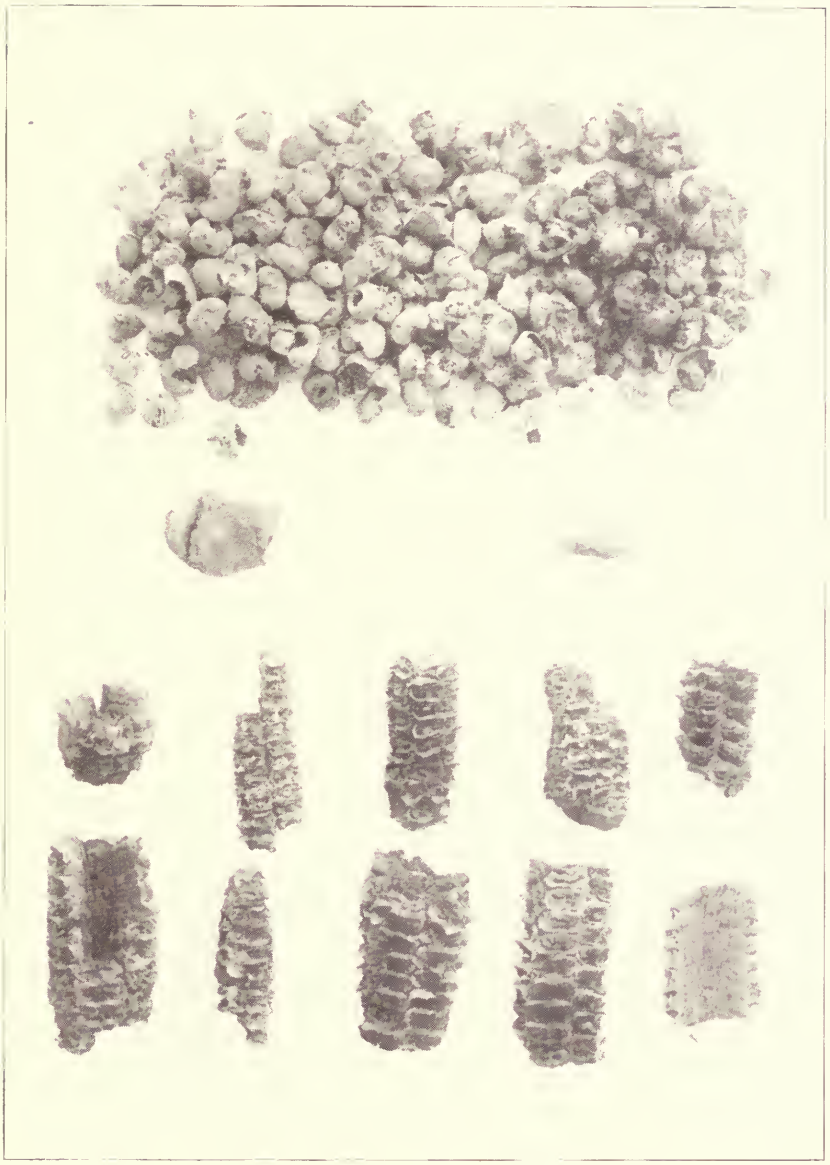


Fig. 21. Charred corn and cobs found in the fireplaces.

in evidence. Smith found at the Kentucky site papaw seed and wild plum seed.

SECURING OF FOOD.

Man's greatest necessities are food and water, and the securing of food to meet his needs must often have been a very severe problem. As for water, he could locate his primitive home near a stream or spring where there was always a constant supply. Again, we often find within fort walls large reservoirs for preserving the water supply, such as those at Ft. Ancient, but we find no evidence of the digging of anything like wells; and no doubt dependence for the most part was placed upon natural supply from streams and springs.

The securing of the necessary food would certainly tax the ingenuity of primitive man, with his primitive implements and methods.

Hunting evidently was the principal means of securing food, for no doubt all animals and birds had to be hunted. The weapons used, as indicated by our finds, were the bow and arrow. Arrow points chipped from flint were in evidence everywhere in the village, as well as arrow points made from tips of the horns of the deer. Perhaps other weapons used in the chase were the stone axe and celt, also found in the village site.

Fishing was another means of securing food, as indicated by the fish-hooks made of bone; and it is not improbable that many of the finely serrated arrow points found were used for spearing fish.

Agriculture. The finding of corn in so many places in the village, together with shell hoes in abundance, would indicate that agriculture was an important source of food supply.

Wild Fruit. The presence of wild cherry seeds, wild plum seeds, blackberry seeds and the seeds of the papaw, would indicate that wild fruits were much used for food.

Wild Nuts. The shells of walnuts, hickorynuts, butternuts and acorns found in the fireplaces indicate the use of nuts as food.

PREPARATION OF FOOD.

After food was secured the next important step was to render it more palatable by cooking. Certainly there must have been

a time in the course of human progress when man did not know the use of fire in the preparation of food, and flesh of animals he killed for food no doubt was eaten in the raw state. But when man became acquainted with the use of fire, naturally the home would become established and the cooking of food would mark an important step in his advancement from the lowest stages of savagery.

Knives played a very important part in the preparation of food.

These implements were usually made of flint, as shown in Fig. 22, Nos. 1, 2 and 4, and were very abundant in all sections of the village. Knives similar to those shown in the cut were found at Baum's, as also were long knives flaked from jasper cores. These flaked knives were not found at Gartner's, nor did Smith find them at the Kentucky site.

Hammerstones, as shown in Fig. 23 were very abundant in the village, and were most useful in the preparation of meats, being used to break the large bones of the deer, elk, bear and mountain lion. Hammerstones were plentiful at Baum's and at Gartner's and also in the Kentucky site. Grooved axes, as shown in Fig. 25 are of special interest, because of their presence near the surface only, or rather in the upper six inches of the soil of the village site. Our own examination did not disclose the grooved axe, but Mr. Wertz found a number of these axes in the village two of which are shown in Fig. 25. The axe might be considered one of the necessary tools in the primitive home, and would no doubt be useful in conjunction with the hammerstone, in the preparation of meats. No grooved axes were found at the Gartner site, nor by Smith at the Kentucky site.

Celts. One of the best known implements of the Ft. Ancient culture is the celt, made of flint or granite, and found everywhere in the village. When attached to a handle they would no doubt serve in cutting up the meat preparatory to cooking. A typical collection of celts is shown in Fig. 26. Celts were found at Baum's and at Gartner's and by Smith occasionally at the Kentucky site.

Fig. 22. Knives and spear points made of flint.

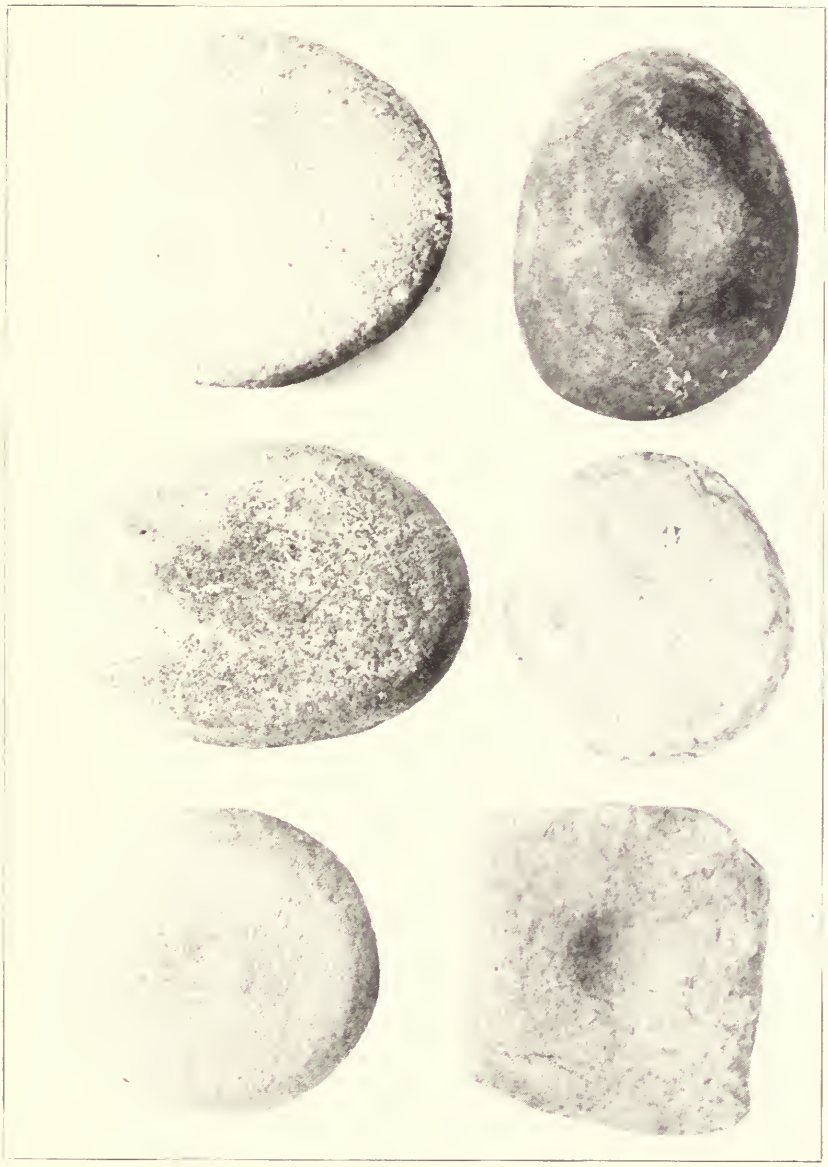


FIG. 23. Hammerstones found in the village.

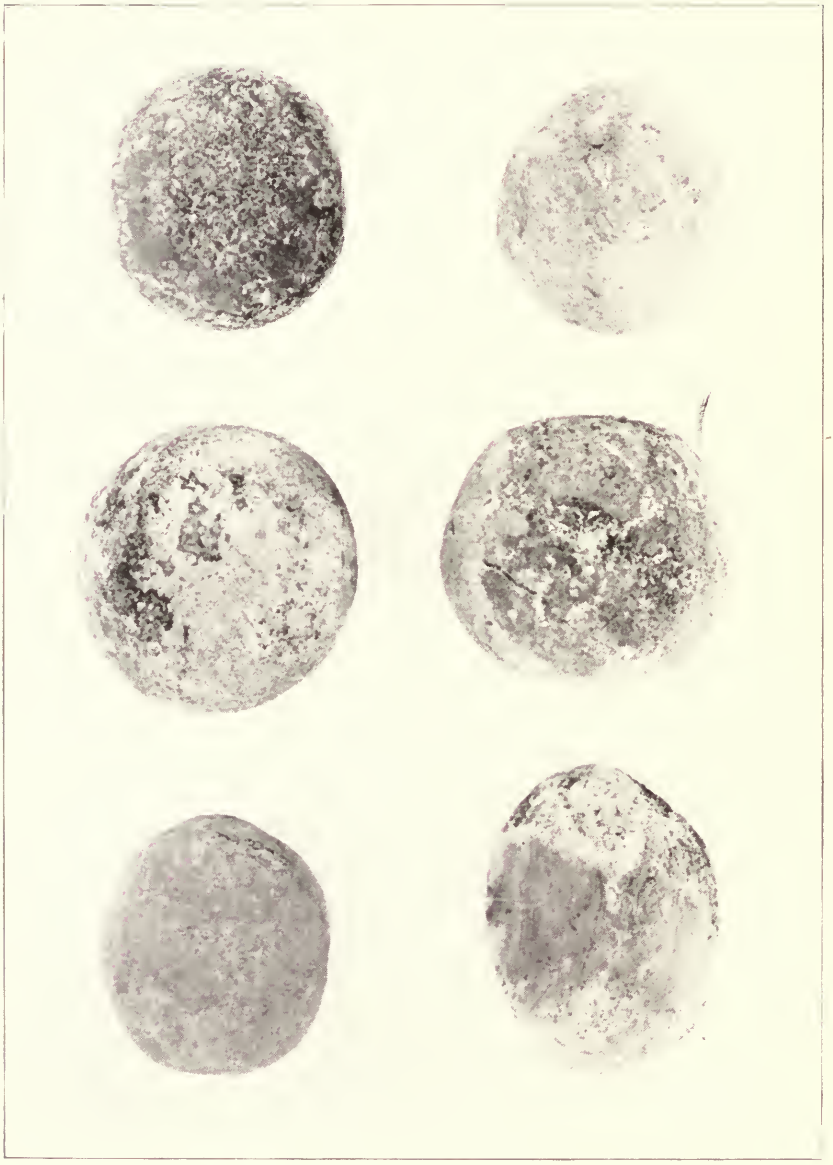


Fig. 24. Hammerstones and stone balls found in the village.

Stone mortars were not abundant in the village, although a number were found in various sections of the site. Good examples of these are shown in Fig. 27. They are made of slabs of the waverly sandstone found in the hills to the east. At Baum's stone mortars were found in all parts of the village, which in every way resembled those found at Feurt's. At Gartner village mortars were found, and from their number,

Fig. 25. Types of grooved axes found in the village.

they must have been universally used. Smith did not find mortars at the Kentucky site.

Pestles made in the form shown in Fig. 28, and known as bell-shaped pestles, were not abundant in the Feurt village, although quite a number were found by Mr. Wertz on the surface of the site. Our survey was unable to find any bell-pestles below the plow line, but the ordinary round and flat grinding stones were abundant. At Baum's and at Gartner's

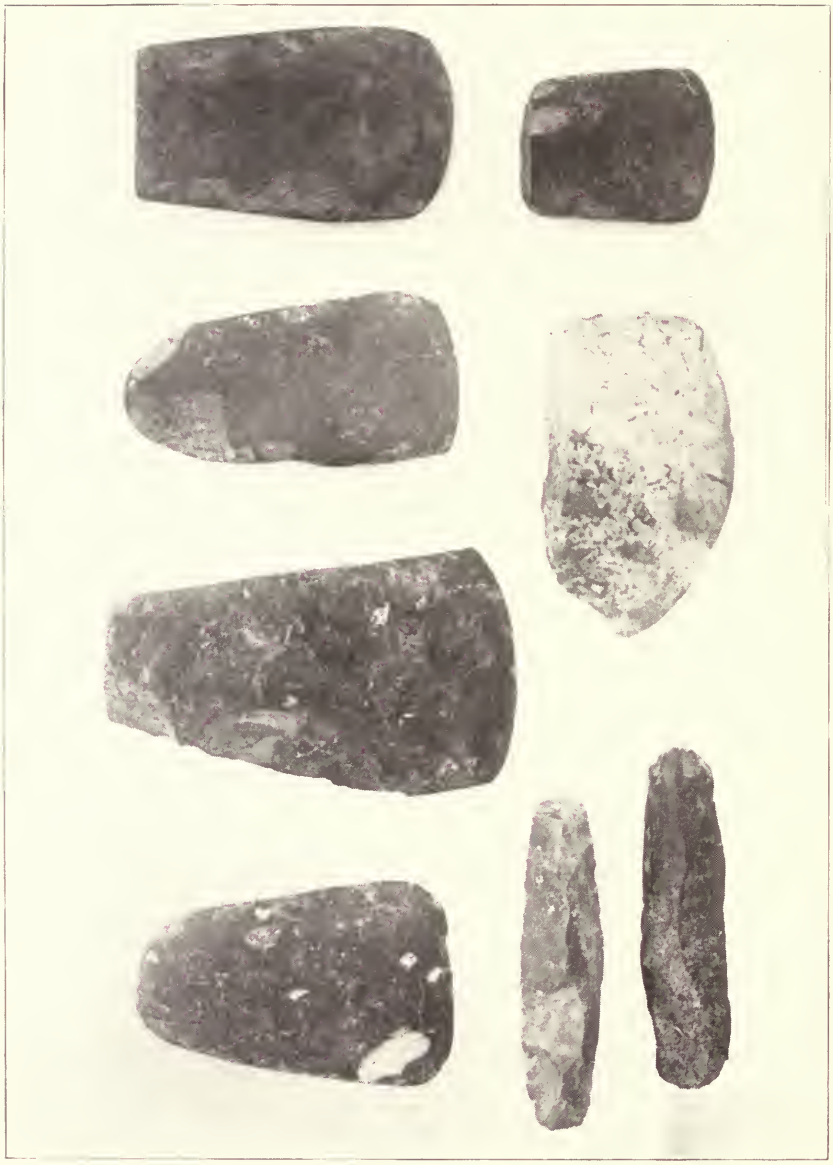


FIG. 26. Celts found in the village.

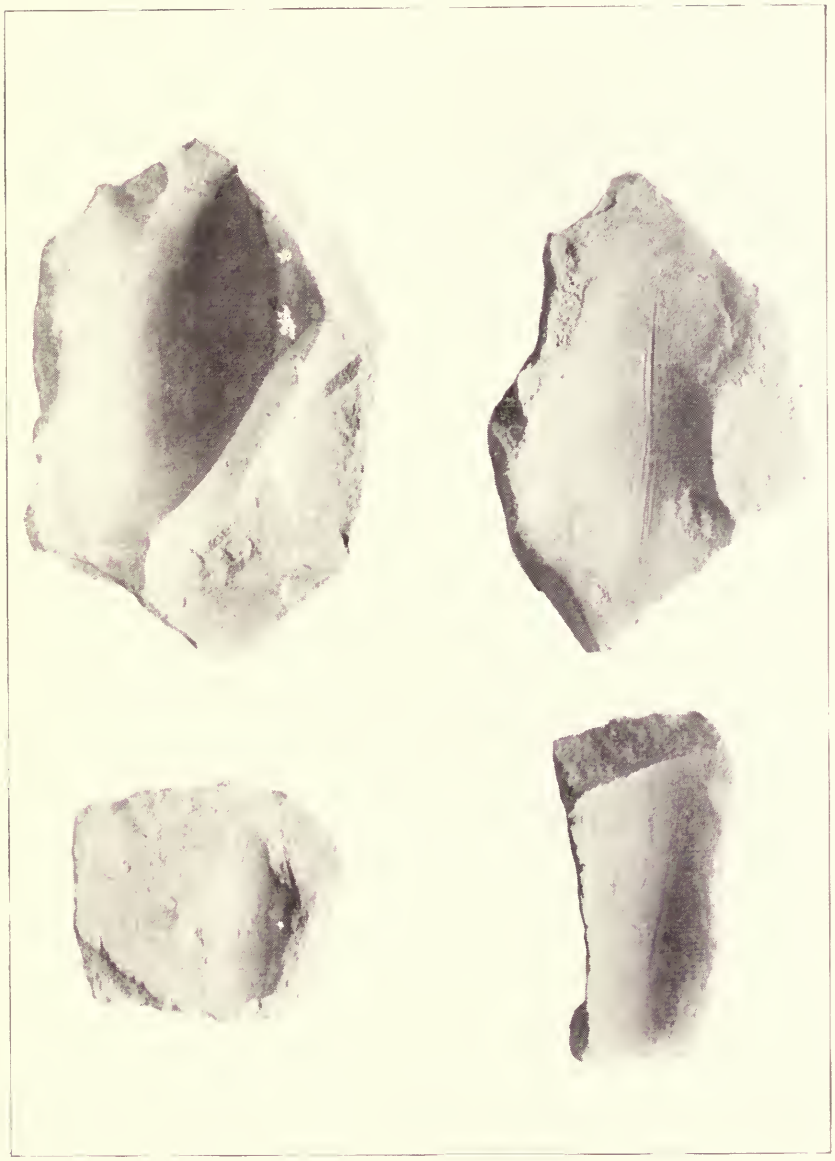


FIG. 27. Stone mortars and grinding stones; $\frac{1}{6}$ size.

the pestle was found, but Smith makes no record of its presence in the Kentucky site.

COOKING OF FOOD.

Roasting. Meat was very likely fastened on sticks and roasted before the open fireplace, as was the custom of the early Ohio Delaware and Shawanese tribes.

Boiling. If broken utensils afford any testimony, one

FIG. 28. Bell-shaped pestles found in the village; ¾ size.

would be led to believe that food was cooked in pottery vessels, broken parts of which are found everywhere in the village, especially around the fireplaces. The pots used for cooking seem to have been placed directly over the fire, for many of them were found in place. In two instances during the explorations on the west side of the village, pots were found upon the fireplaces broken, with the charred remains of corn clinging to their sides. The charred lumps of corn are shown in Fig. 20.

DESCRIPTION OF POTTERY USED FOR COOKING FOOD.

The pottery found in the Feurt village differs but little, if at all, from the pottery found both at Baum's and Gartner's in Ohio, and by Smith in Kentucky. The clay used was no doubt secured just beneath the surface in the village and the tempering material used was broken shell and in a few instances small pieces of quartzite. Several instances were noted in the tepee sites where a quantity of prepared clay properly tempered with broken shells and ready to be used in making vessels had been left upon the floor unused.

FIG. 29. Perfect piece of pottery, holding 3 pints.

No perfect pieces of pottery were found by our survey, but Mr. Wertz found along the bank of the south side of the village a perfect vessel, which is shown in Fig. 29. The pot is undecorated, would hold about one and one-half quarts, is symmetrically made, and might be considered a typical plain piece, though the majority of the vessels of this type were made somewhat larger. The decorated parts of broken ves-

sels were more in evidence than the plain, although found together in every part of the village.

Practically all the forms of decoration are shown in Figs. 30 and 31. Many very large pieces of broken pottery were decorated similarly to No. 1 of Fig. 30, which shows a free-hand decoration by incised lines about one-eighth inch apart. No. 2 of Fig. 30 shows another familiar decoration, made by removing about one-eighth inch of the surface to the depth of about one-sixteenth of an inch. The decoration usually is in straight lines, as in No. 2, or in curves as shown in No. 6 of Fig. 30. Another form of decoration much met with is shown in Nos. 3, 4, of Fig. 30 and No. 2 of Fig. 31. This is made by indentation. Decorations of this sort usually are found on small vessels.

A very pleasing decoration is shown in No. 5 of Fig. 30 and No. 4 of Fig. 31. This decoration is made by the use of a paddle around which cord had been wrapped. No. 6 of Fig. 31 is a combination of indentations, both dots and lines. Nos. 9 and 10 of Fig. 31 show two kinds of indented rims, both of which are very pleasing.

Practically all of the broken pots found at Feurts' had handles, either for suspension over the fireplace, or for removing from the fire after the food had been cooked, or for carrying. The principal varieties are shown in Figs. 32 and 33. Nos. 1 to 8 inclusvie of Fig. 32 represent all the different forms of lugs found in the village. No. 9 of Fig. 32 represents a duck head, which is carried above the rim. The specimen does not show to advantage in the cut, but is a very good representation of a duck's head. No. 12 of Fig. 32 represents a raccoon in the act of climbing over the rim of the vessel. Perhaps these life forms were symbolic, having definite relations to their use.

In Fig. 33 the handles are shown. No. 7 of Fig. 33, is a handle detached from the rim, which shows the manner of attachment. A hole is bored through the body of the vessel at a point suitable below the rim, and the handle, freshly made, is thrust through the hole and properly clinched on the inside. The top is fastened to the rim, and when the vessel becomes

FIG. 30. Decorated potsherds.

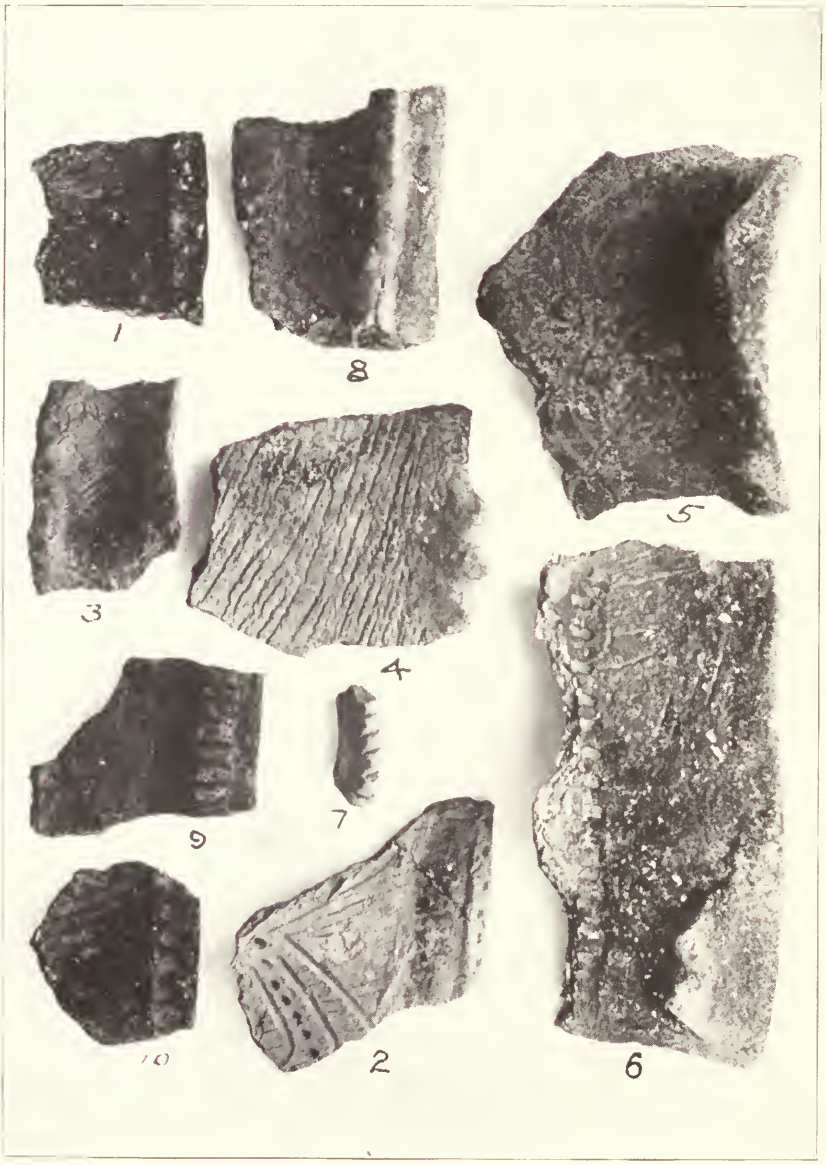


FIG. 31. Decorated rims of large pots.

Fig. 32. Various forms of handles from broken pots.

Fig. 33. Various forms of handles from broken pots.

dry and burned the handle is very strong and firm. Fig. 34. Nos. 1 to 7 are small objects made of clay. No. 1 is a round ball three-fourths inch in diameter. No. 2 is made in the image of a child, head and legs broken off, the specimen is decorated by finger nail markings. No. 3 is the head of a small animal, perhaps the mink. No. 4 is a broken ornament. No. 5 is a small pendant covered with finger nail markings. No. 6 is a small crescent. No. 7 is a large crescent, broken. No. 8 is the modeled head of the mountain lion, from the rim of a pot. No. 9 is also a modeled head, that of a bird. No. 10 is a modeled raccoon, on the side of the rim of a vessel. No. 11, modeled human head, from rim of vessel.

Practically all of the forms and decorations of the pots of the Feurt site were found at Baum's and at Gartner's. So similar are they that should the fragments accidentally become mixed, it would be impossible to separate them, and the same might be said of the pottery found by Smith in the Kentucky site. At Feurt's, no small miniature pottery was found, while at Baum's and Gartner's many examples of this minature ware were in evidence. Smith also found the small pottery in the Kentucky site, but no evidence of its presence at Feurt's was discovered.

USE OF POTTERY IN MORTUARY CUSTOMS.

The use of pottery in connection with mortuary observances was not discovered at Feurt's although more than four hundred graves were examined. This lack of any evidence of placing pottery with the dead, although practiced by this same culture both at Baum's and at Gartner's is of special interest. At Baum's one hundred and twenty-seven burials were found, only six of which had pottery placed in the grave. At Gartner's a fine specimen of pottery vessel was found in one grave, while in others the prepared clay, ready to be made into pottery had been placed in a niche made near the head of the grave. Smith did not find pottery with any of the burials of the Kentucky site.

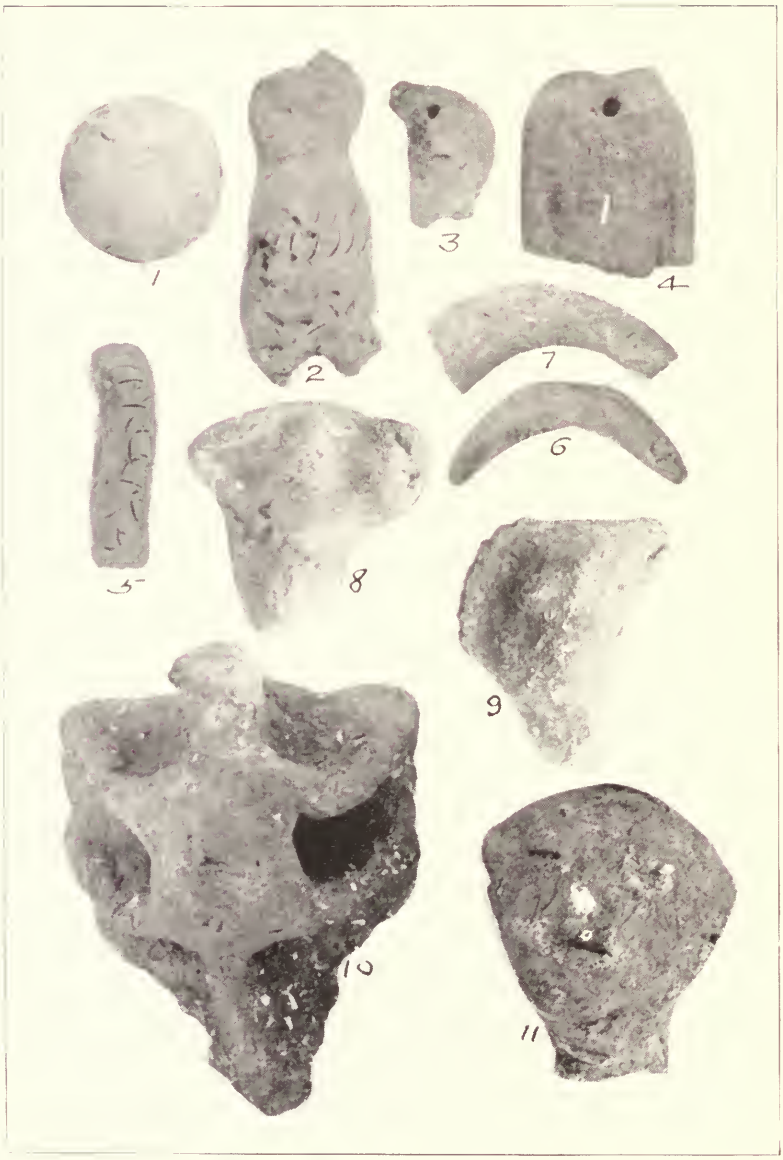


FIG. 34. Objects made of clay; $\frac{2}{3}$ size.

IMPLEMENTS MADE OF STONE.

The Arrow Point. The most common of the stone implements found in the Feurt village is the arrowpoint, showing that the bow and arrow was the most used weapon of its early inhabitants. The arrow points for the most part are of the triangular type, made of coal-measure flint, with now and then a specimen made of flint from Flint Ridge, Licking county. The triangular points are of two kinds, serrated and plain. Excellent examples of the serrated point are shown in Fig. 35. This type of arrow point equals the plain point in numbers, more than one thousand of the two types being found in the village. Fig. 36 shows fine examples of the plain triangular type. The triangular type of arrow point was found in abundance at Baum's and Gartner's but mostly of the plain variety, and not a typical specimen of the serrated form was found at either Baum's or Gartner's. Smith found the serrated and plain at the Kentucky site.

The serrated type is found everywhere in the region of the lower Scioto and the Ohio rivers.

Spear points. The spear points found in the village site are of special interest, since the greater number were found near the surface. Those found below the plow line are similar to the arrow points in form, being of the triangular type, only larger, and vary in length from three to four and one-half inches. Those found on the surface are shown in Figs. 37 and 38, and show wonderful development of the art of flint chipping. The splendid specimens shown in Figs. 37 and 38 were found by Mr. Wertz during his many years of surface exploring at the Feurt site. Flint spear points were most plentiful on all of the Ohio sites, and all show excellent chipping, but the specimens found at Feurt's were far superior both in design and workmanship. Smith found the spear point at the Kentucky site, but the specimens were inferior to those found in the Ohio sites.

Flint Drills. Flint drills were very abundant in the Feurt site. A good selection of the various forms is shown in Fig. 39. Any one of the ten forms was often duplicated, of some a dozen or more specimens being found. Flint drills were plen-

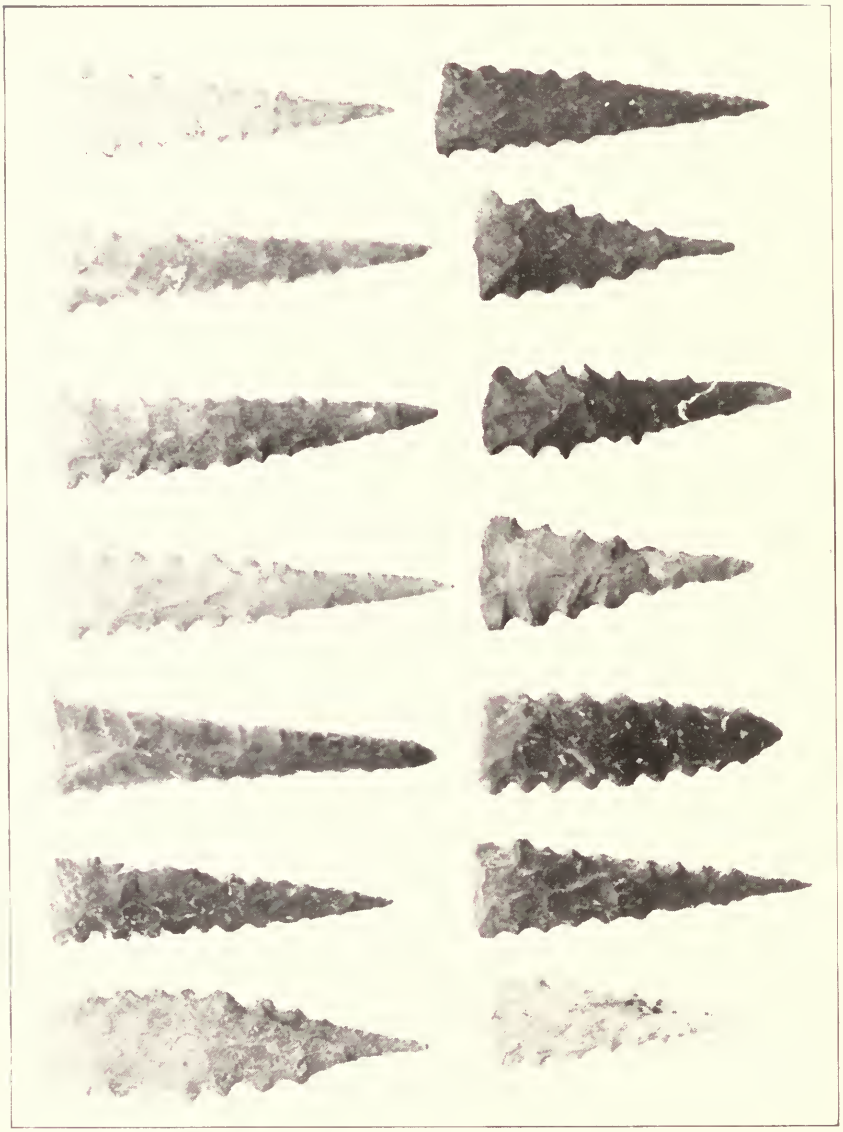


FIG. 35. Serrated arrowpoints found in the village; full size.

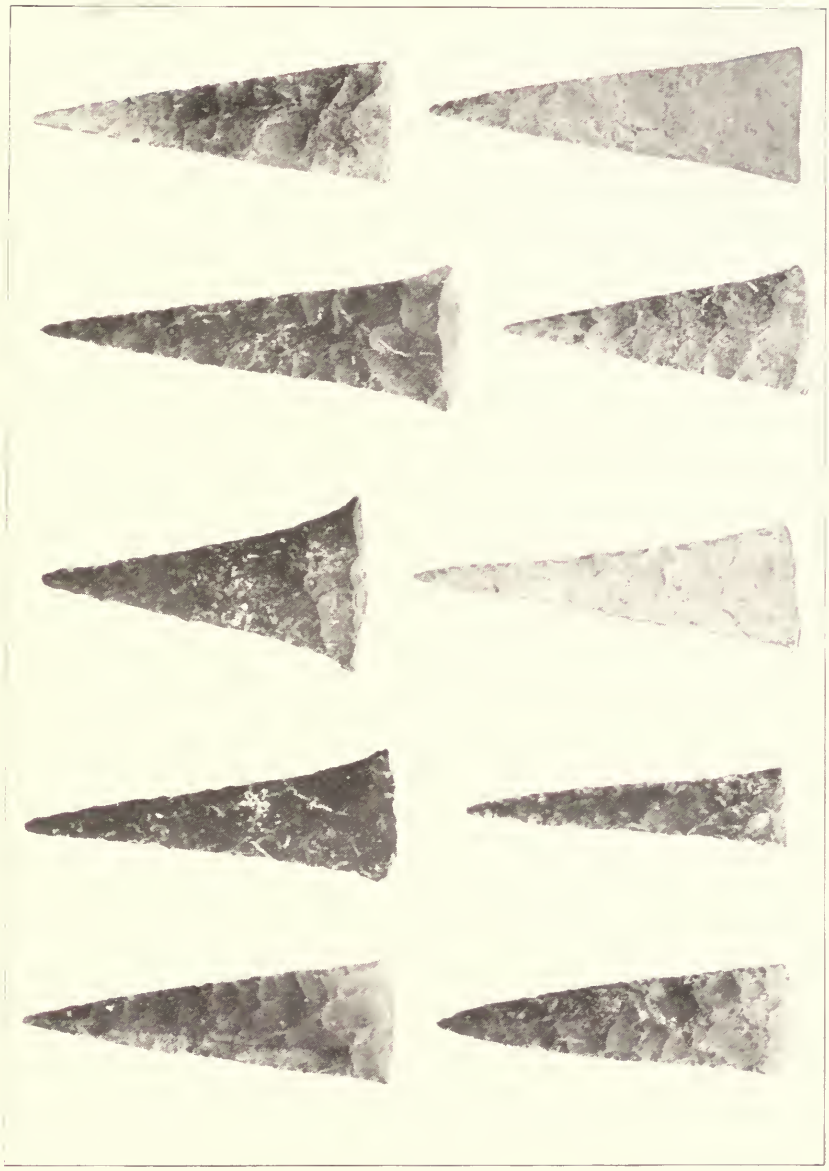


FIG. 36. Plain triangular arrowpoints; full size.

Fig. 37. Large spearpoints; full size

FIG. 38. Large spearpoints; full size.

Fig. 39. Flint drills; full size.

tiful at Baum's but no specimens were found at Gartner's, although evidence of the use of the drill was met with frequently and they were no doubt in general use. Smith found the drill in the Kentucky site, but not in abundance, and in less variety as to form than found at Baum's and at Feurt's.

HEMATITE IMPLEMENTS.

Objects made from hematite were frequently met with in the village. The celt was the most abundant, and varied in size from three-fourths of an inch in length to two and one-half inches, many of them showing usage. Good examples of the hematite celt are shown in Fig. 40, Nos. 1 to 4.

Hematite plummets also were found in goodly numbers. Nos. 5 and 6 of Fig. 40 show two forms most commonly met with. Hematite hemispheres also were found, as shown in No. 7 of Fig. 40, as were hematite cones, shown in No. 8 of Fig. 40.

An unfinished gorget made of hematite is shown in No. 9 of Fig. 40. Gorgets made of hematite are very unusual, and are of special interest when found in the village sites of this culture. Objects made of hematite were not found either at Baum's or at Gartner's and Smith does not report it in the Kentucky site.

Hematite nodules are found in abundance within the limits of Scioto county, at various places where the hematite nodules outcrop, and consequently the material was very accessible to the dwellers in the Feurt village. Small hematite paint cups were frequently found. These are shown in Fig. 41, Nos. 1, 2, 3, which are good representations of the various sizes found. No. 4 of Fig. 41 is a round ball of quartzite, finely polished No. 5 of Fig. 41 is a diamond-shaped unfinished specimen, made of quartzite, evidently intended for a bead, as an attempt is made to perforate the piece by drilling. No. 6 of Fig. 41 is a limestone cone finely polished.

Fig. 42 shows two very interesting specimens. The larger is a spud-shaped implement made of cannelcoal, and the other a chisel of banded slate. These two specimens were found by Mr. Wertz. Cannelcoal objects were not found by our survey.

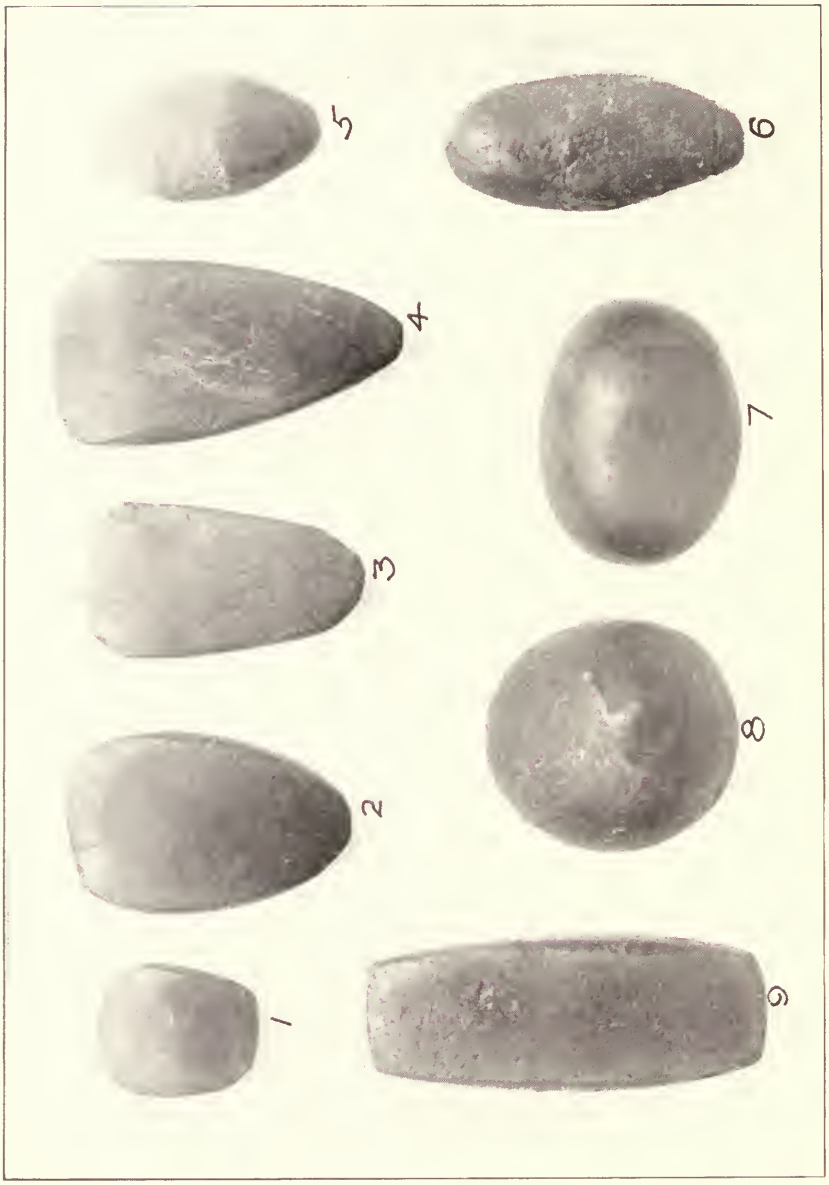


FIG. 10. Hematite objects; ⅓ size.

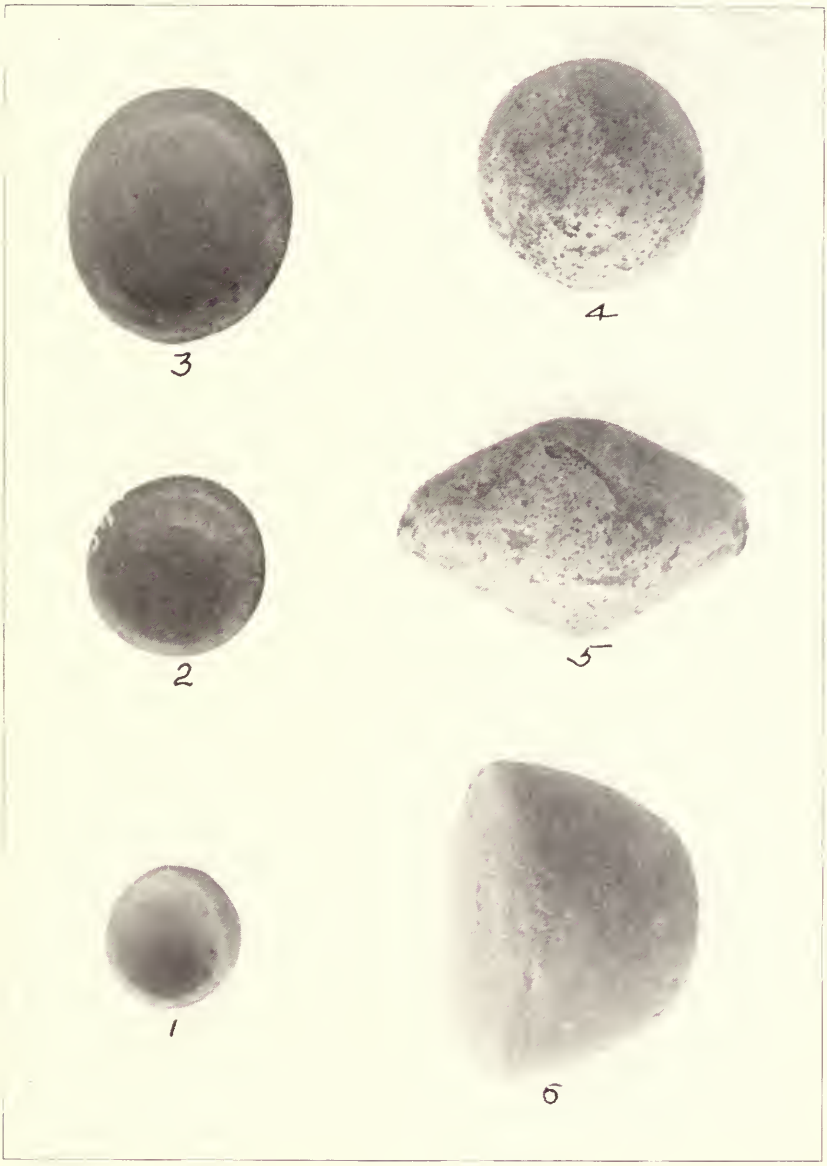


FIG. 11. Hematite and other objects found in the village; full size.

Fig. 42. Objects of cannel-coal and slate found in the village; full size.

but Mr. Wertz found many objects made of this mineral upon the surface of the village during the years of his examinations of the site.

ORNAMENTS OF STONE.

Fig. 43 shows a number of stone gorgets found in the village site.

Nos. 1 and 2 are almost alike, very likely are unfinished, and are made of waverly sandstone. No. 3 of Fig. 43 is unfinished, as a hole had been started at the center and left. The specimen is made of black slate. No. 4 of Fig. 43 is a finished gorget made of waverly sandstone and pierced with one hole for suspension. Fig. 44 shows several effigy ornaments of unusual interest. No. 1 is perhaps an effigy of a mountain lion claw. No. 2 is an ornament made of banded slate and decorated with a notched edge. No. 3 is a large bead made of hematite. No. 4 is a gorget made of banded slate and pierced with one hole. No. 5 is the head of a bird made of sandstone, and No. 6 is the effigy of a bird, made of black slate.

Fig. 45 shows one of the most interesting and valuable of the specimens found in the village site. The specimen is of black slate, is about six and one-half inches long and one-fourth inch in thickness, and is made in the shape of a large spear point. On the one face, that shown in the cut, is plainly carved a mythical fish-serpent with large canine teeth and exaggerated spines. The greater part of the body and spines are decorated with criss-cross lines. A zigzag line is drawn from the eye to the heart, which gives us some clew to the petroglyphs found along the Ohio river and in various parts of the state. In practically all animals and birds cut upon stone, a zigzag line is thus drawn from the eye to the heart, and one must infer that the Feurt peoples were of, or contemporaneous with, those who carved the petroglyphs and that they knew and understood the meanings of such drawings.

ORNAMENTS MADE OF CANNELCOAL.

Cannelcoal objects were found in abundance in the upper six inches of the village site, and many effigy canines of animals

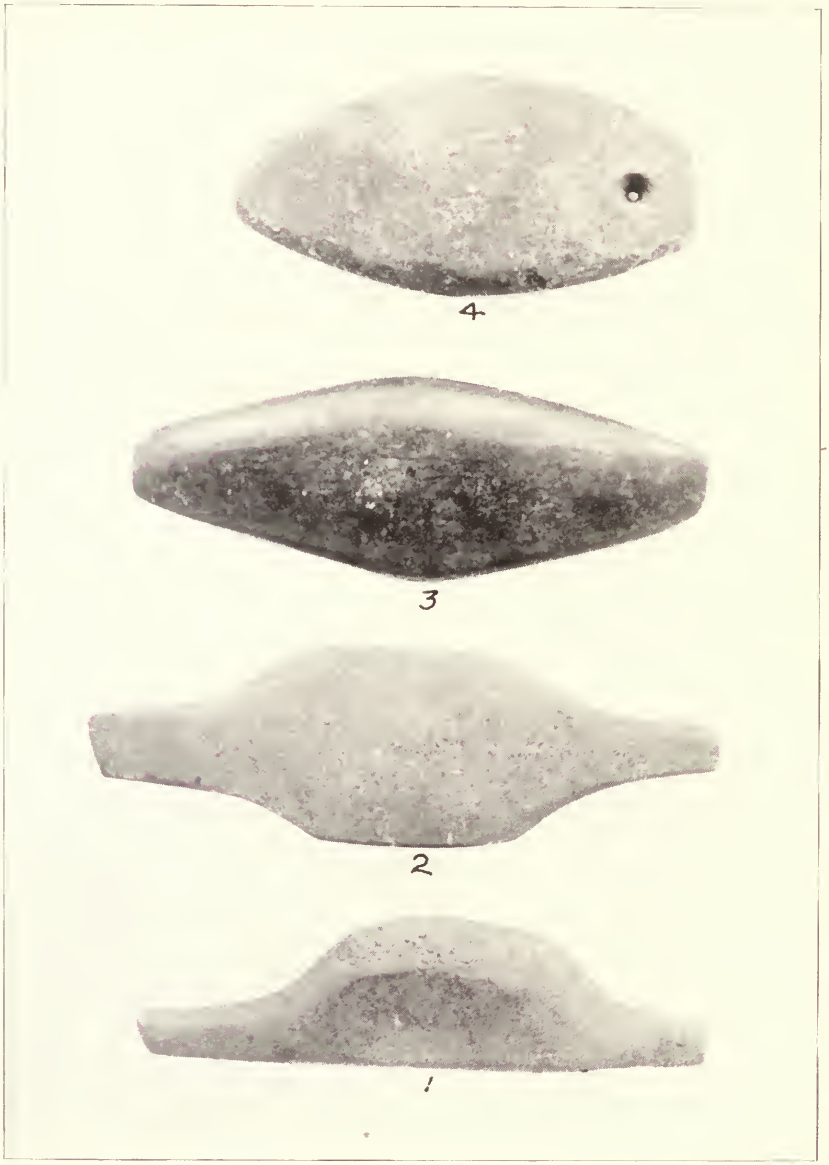


FIG. 43. Finished and unfinished objects found in the village; full size.

FIG. 44. Effigy and other objects found in the village: full size.

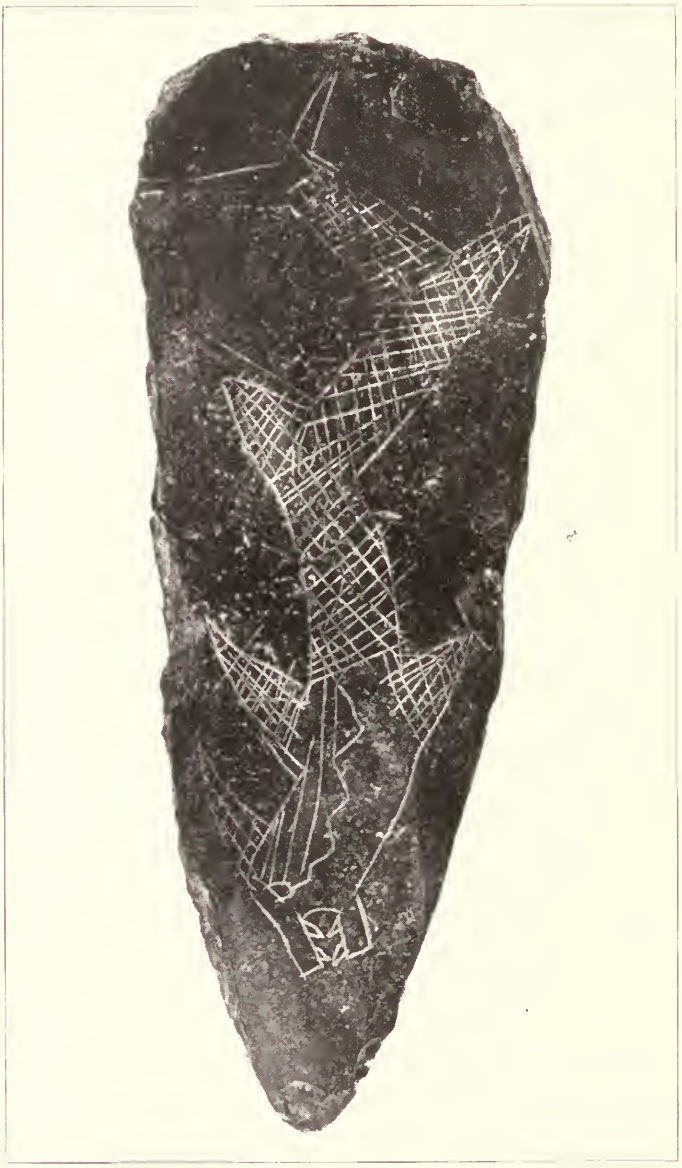


FIG. 45. Mythical fish-serpent found in the village; $\frac{2}{3}$ size.

and claws of birds were secured by Mr. Wertz during his explorations in the Feurt village. These are shown in Fig. 46. Other objects made of cannelcoal were also abundant, examples of which are shown in Fig. 47. One specimen, a broken gorget, is decorated by an incised drawing of some grotesque object. Other specimens were in the process of making. Our survey did not find any of the cannelcoal objects, which seem to have been a late acquisition to the artifacts of the tribe.

At Baum's and at Gartner's no objects made of cannelcoal were found, but Smith found in the Kentucky site many effigies made of cannelcoal similar to those found at Feurts'.

DISCOIDAL STONES.

Discoidal stones or disc-like game stones are of special interest because of the large number found in every part of the village — upward of 300 specimens. Many of them were mere discs of waverly sandstone, perfectly plain or decorated with incised lines, and sometimes perforated with a single hole at the center. Other plain discoidals are made of pottery fragments, while still others are of cannelcoal, as shown in Fig. 47. Four specimens of the cannelcoal discs are shown. No. 1 is fairly well made. No. 2 is finely made and highly polished. No. 3 shows some chipping and No. 4, a fairly well made specimen, might be considered representatives of the class. The bi-concave type of discoidals found in the village were of two kinds, perforated and unperforated. Either class may be plain or decorated.

The plain bi-concave type, perforated, is shown in Fig. 48, Nos. 1, 2 and 3. For the most part they are made of granite, quartzite or waverly sandstone, and are highly polished, showing much skill and a great amount of patience in their manufacture. None of the well-wrought specimens would exceed two and one-half inches in diameter and none were less than one and three-fourths inches in diameter. The decorated bi-concave type, perforated, are of special interest because of the great diversity of decoration. Several were found with a bird foot, perhaps that of the wild turkey, carved upon both faces, as shown in Fig. 49, No. 2, while others have plain lines running from the

Fig. 46. Objects made of cannel-coal; full size.

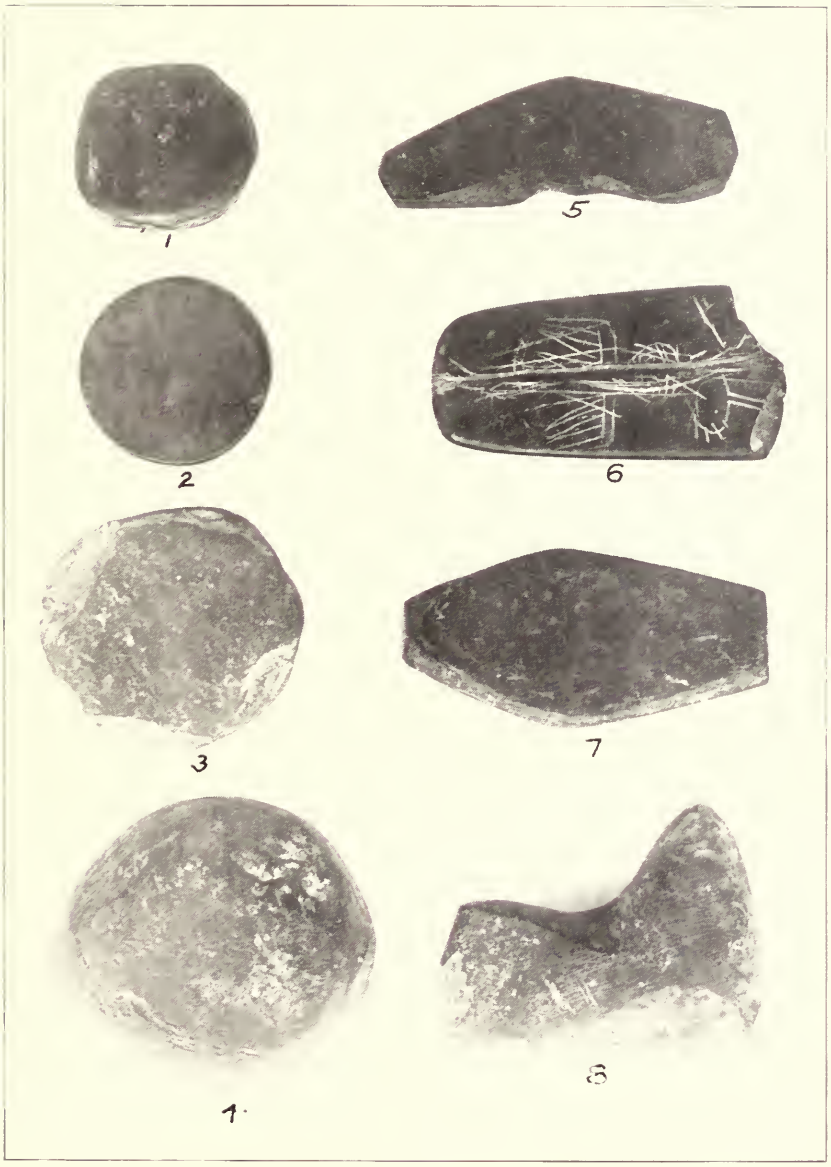


FIG. 47. Objects made of cannel-coal: full size.

FIG. 18. Bi-concave discoidal stones; full size.

central hole to the edge of the discoidal as shown in Fig. 50, No. 4. Still others have the lines extending from the central hole to the rim and the space betwen the lines decorated with criss-cross lines, as shown in Fig. 50, No. 5. Another form of this type is shown in Fig. 50, No. 6 where the concave part is slightly raised, forming a ring around the central hole. Only a few of this type were found.

The plain bi-concave type were found in all parts of the village, and were perhaps as plentiful as the bi-concave forms. A good example is shown in Fig. 48, No. 5. Another form very near to the plain is shown in Fig. 48, No. 6, which has merely a countersunk hole in each side of the specimen as a decoration. Another type of special interest is made like No. 6, with lines radiating from the center. This type is shown in Fig. 50, No. 8.

Another form of the unperforated bi-concave, which is noteworthy, is shown in Fig. 49, No. 1. This discoidal was not found by our survey but was found in the village site more than a quarter of a century ago by a Mr. Creighton, who disposed of the specimen to Mr. S. P. Adams. It is decorated on the concave part on either side with a turkey foot. The specimen is unusually large, being three and five-eighth inches in diameter and three-fourths of an inch in thickness, and is made of a close grained granite rock. The specimen is shown in Fig. 49, No. 1.

Another very interesting discoidal is shown in Fig. 50, No. 1. It is decorated with two lines drawn at right angles directly through the center of the specimen, and the four quarters of the stone so divided are further decorated with lines forming a geometric figure. Specimen No. 2 of Fig. 50 represents a wheel in motion and is the only one of its kind found during our work in the village.

Another type of discoidal is shown in Nos. 3 and 7 of Fig. 50. This type shows a convex center instead of concave. The convex part is marked in the center with a small depression, and radiating from this are four lines dividing the disc into four quarters. Another type which seems very prominent and is frequently met with is shown in Fig. 48, No. 4. The specimen shows a perfectly plain circular disc divided into four parts, two

Fig. 49. Discoidal stones decorated with bird foot; full size.

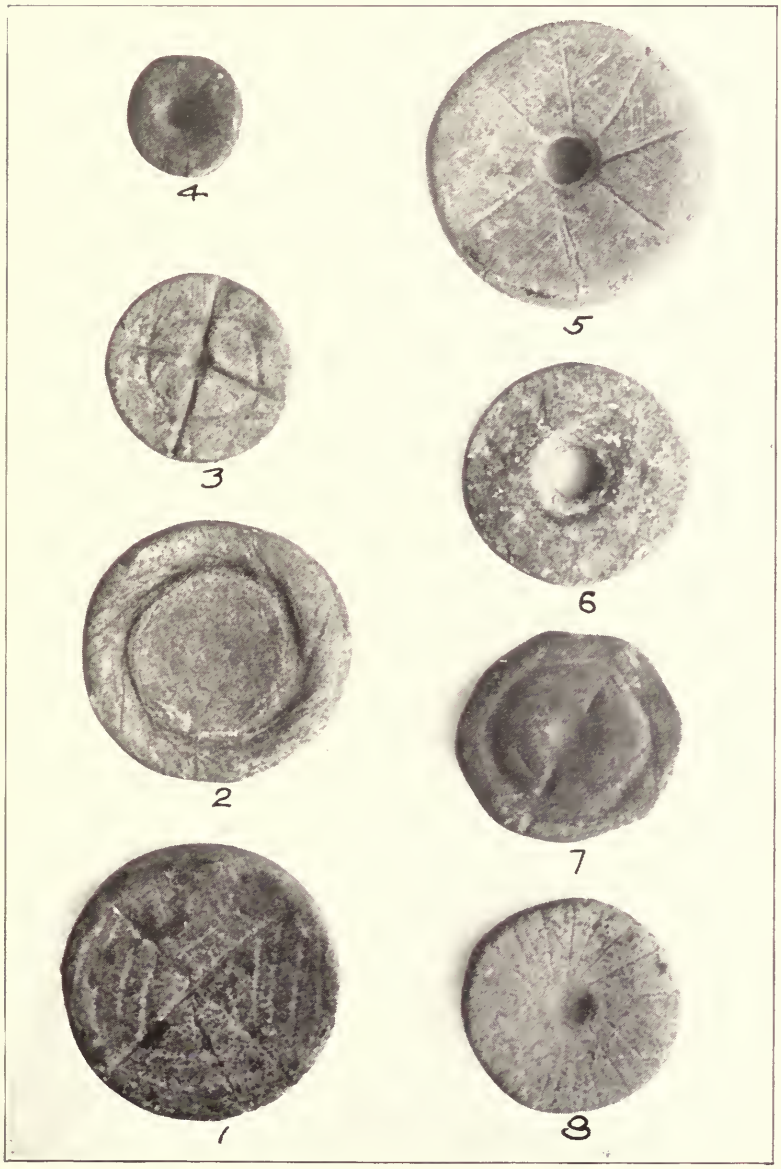


FIG. 50. Various forms of decorated discoidals; full size.

of which are of equal size and larger than the other two which are of unequal size.

Discoidal stones seem to have been of unusual importance with the Fort Ancient culture, but the section near the Ohio river region is more prolific in these specimens than any other part of the country. In many village sites in Adams, Brown and Hamilton counties this small size discoidal has always been met with. At Feurt site previous to our examination, many specimens were found. Mr. Charles V. Wertz has more than one hundred and fifty specimens in his collection; Mr. S. P. Adams of Portsmouth, more than one hundred and twenty-five; Mr. John Welty, Mr. Morris Hicks and Mr. Paul Esselborn, all collectors of Portsmouth have many fine specimens in their respective collections.

Discoidal stones were found at Baum's resembling in general form those found at Feurt's, but were never so plentiful, and might be considered of rather rare occurrence. At Gartner's one specimen only was found in a grave of the mound, while the village site did not produce a single specimen. Their use in Ohio seems to have centered around the Ohio river region, and gradually to have diminished toward the north. Smith found the discoidal stones in goodly numbers at the Kentucky site, south of the Ohio river region, but not in such profusion as our survey unearthed at Feurt's.

PIPES.

Pipes were found in the Feurt site in every part of the village, and seem to have been generally used from the early beginnings of the village. Many of the pipes were broken while in use and then discarded, if beyond repair. Others in a perfect state, were frequently found in the tepee site, where they had been mislaid and afterward covered up by fresh soil carried in by the inhabitants to make their dwelling place more sanitary. Many kinds of stone were employed in the manufacture of pipes, such as Ohio pipestone, limestone, sandstone, laurentian slate and hematite, but the greater number were made of the Ohio pipestone, which was secured on the very crest of the hill almost in sight of the village. Suitable pieces for the making of pipes were brought to the village, there to be manufactured into

form. No large pieces were found in the village site, indicating that the blocking out to the desired size and shape was done at the quarry.

This old Indian pipestone quarry was known to the early settlers in this section of Ohio, and Mr. Feurt tells me that it was exploited a number of years ago, with the idea of using the pipestone in the manufacture of firebrick. It proved, however, to be unfitted for this purpose on account of its high percentage of iron and the project was abandoned. However, the contained iron did not interfere with its use by primitive man, for the manufacture of pipes and ornaments.

As before stated, the outcrop of the pipestone lies high up on the hills and gradually dips to the south-east, causing the outcrop in the eastern part of the county to be near the base of the hills. The pipestone stratum varies in thickness from one and one-half feet to eleven feet, with perhaps an average of three and one-half or four feet. In color the pipestone varies greatly, ranging from almost white through yellow and brown to dark red. The dark red variety was used by the Feurt peoples in preference to the other colors.

This red variety is very hard to distinguish from the Minnesota pipestone and many pipes and ornaments made of the Ohio material have been attributed to the Minnesota quarries. The Tremper mound peoples, living directly across the river from the Feurt side, preferred using the light grays, yellows, and browns, although the largest plain pipes found there were made of the dark red variety. None of this red variety was used for their sculptures of birds and animals, while at Feurt's the red variety was used both in the plain and sculptured forms.

THE PIPE IN ITS STAGES OF MANUFACTURE.

The pipe, as is true of practically all types of artifacts, was found in its various stages of manufacture, and exceptionally good examples were obtained both of the plain and sculptured forms. In Fig. 51 is shown a series of specimens illustrating the successive steps in the manufacture of a pipe in the effigy of the human face. Beginning with No. 1 is shown the blocked out piece as it is brought from the quarrys and before pecking or

Fig. 51. Shows stages in the manufacture of two types of pipes; full size.

grinding has been started. In No. 2 the pecking and polishing has begun. In No. 3, the crude outline of the face is apparent, and in No. 4 the pipe is a finished product. In row No. 2 is another series of specimens, showing the stages of manufacture of the plain elbow type. No. 1 shows the specimen being pecked into form; No. 2 shows the general form the pipe will be when completed; No. 3 shows the pecking completed and ready for grinding and polishing, while No. 4 is the finished product ready for use. All of the specimens shown in Fig. 51 are of the dark red pipestone.

EFFIGY PIPES.

The sculptured pipes found in the Feurt village differ greatly from those of their neighbors, the Tremper mound peoples across the river. The portrayal of life forms is not so realistic and the sculptures lack detail, so that outside of the human face sculptures, it would be difficult to determine what kind of bird or animal the primitive artist had in mind. On the other hand, the Tremper mound peoples were able to produce sculptures with such realistic and minute detail, that not only the animal or bird is readily identified, but its habits and characteristics are fully portrayed.

The Feurt mound peoples had not reached so high a stage of development as is shown by the effigy pipes in Fig. 52. No. 1 of Fig. 52 is a pipe made in the form of a discoidal stone, and represents one of the bi-concave plain type, made of waverly sandstone. Nos. 2 and 4 are made in the image of the human face. A study of the specimens will soon convince one of their similarity. No. 2 was found by Mr. Wertz and is made of a light gray pipestone, and No. 4 is made of a dark red pipestone. No. 3 of Fig. 52 is of a light gray pipestone and is perhaps intended for a bird. This specimen also was found by Mr. Wertz. No. 5 of Fig. 52 is supposed to represent an animal head, as the large tongue and teeth are shown. The specimen is made of hard black hematite.

Fig. 53 shows three more sculptured pipes. No. 1 is made of waverly sandstone and perhaps was intended to represent a bird of some kind. The pipe is well made, is of unusually large

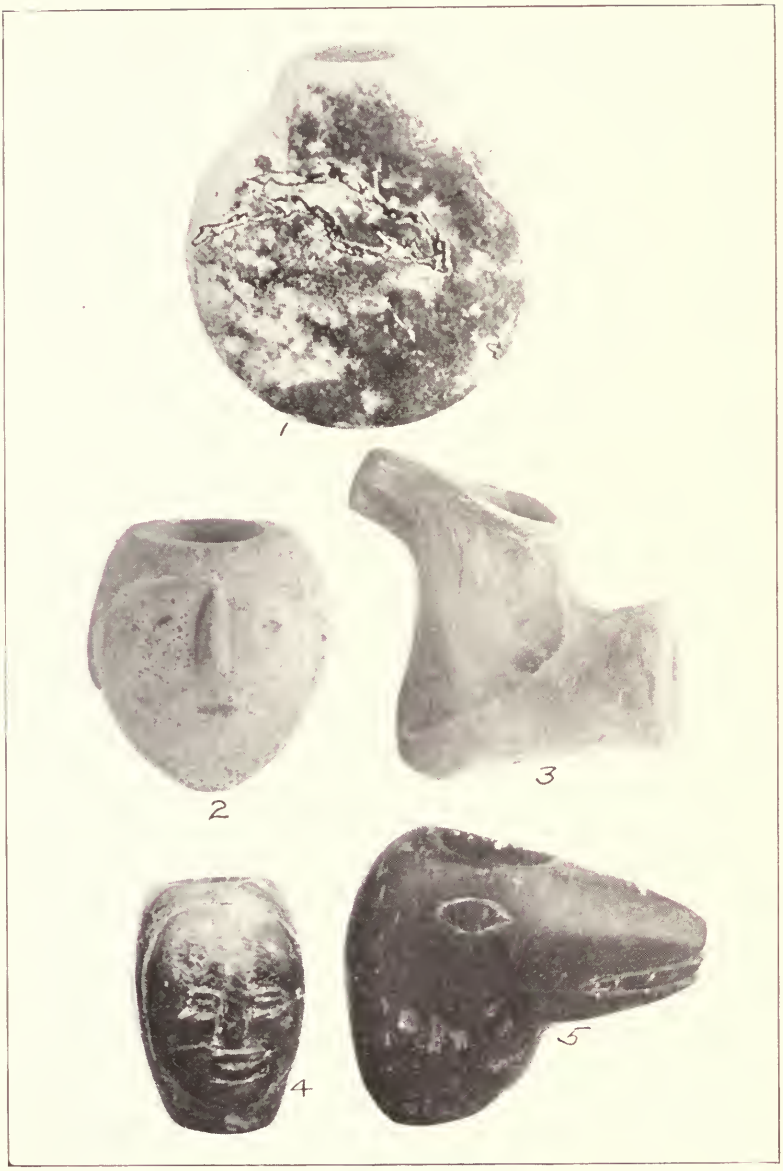


Fig. 52. Effigy pipes; ⅞ size.

FIG. 53. Effigy pipes; ¾ size.

size and shows much use. No. 2 is a small effigy pipe representing the head of a bird with a small beak. The pipe is made of a light gray pipestone and like No. 1 shows long use. No. 3 of Fig. 53 is a very unusual pipe representing the human form in a kneeling position. The head and body parts are missing, the pipe having been broken while in use and thrown away. The specimen was found by Mr. Wertz on the west side of the village.

One feature of the sculptured pipes found at Feurt's is of interest when compared with pipes found at Tremper's across the river. In the Tremper pipes the smoker would always face the animal or bird, and in the Feurt pipes the opposite is noted.

Fig. 54 shows four pipes, two of which, Nos. 1 and 2, might be classed as effigy pipes. These two pipes are of the platform type, with the platform made in the effigy of the stemmed arrow head or spear, and the bowls plain. In the Tremper mound effigies, the stem was always plain and the bowls made into the forms of animals and birds. Nos. 3 and 4 of Fig. 54 show a type of pipe frequently met with in the village, all of which were made of the dark red pipestone.

Fig. 55 shows six specimens of the L-shaped pipe, made of the waverly sandstone so abundant in the immediate vicinity of the village site. All these show use in smoking, No. 1 in particular, which is half filled with the charred tobacco. After smoking, the owner doubtless misplaced the pipe on the floor of his tepee, where it became covered with debris and in due time with the fresh soil carried in.

This is the only record as far as we know, of the finding in our Ohio mounds and village sites of a pipe filled with the charred tobacco. No. 2 of Fig. 55 is a fine example of this type of pipe although it has a longer stem and a larger bowl than is usual. Nos. 3, 4 and 6 show the usual size of the pipes of this type. The angle of the bowl to the stem varies slightly in different specimens from the right angle. No. 5, shows an extreme variation in the angle of the bowl to the stem. Fig. 56 shows six more pipes of the same type as shown in Fig. 55. Nos. 1, 3 and 5 are made of red pipestone. No. 1 is unfinished, lacking the perforation in the bowl and stem. Nos. 3 and 5

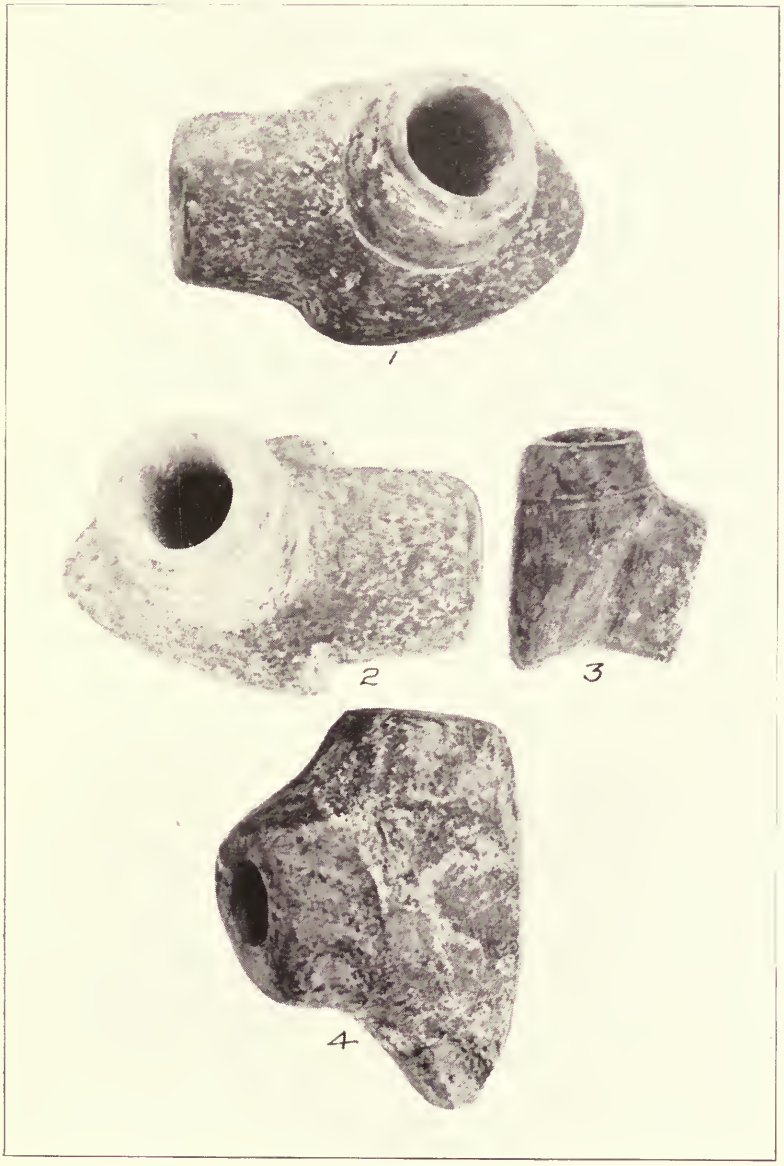


FIG. 54. Pipes made of red Ohio pipestone; 7/8 size.

FIG. 55. Pipes made of waverly sandstone; 7/8 size.

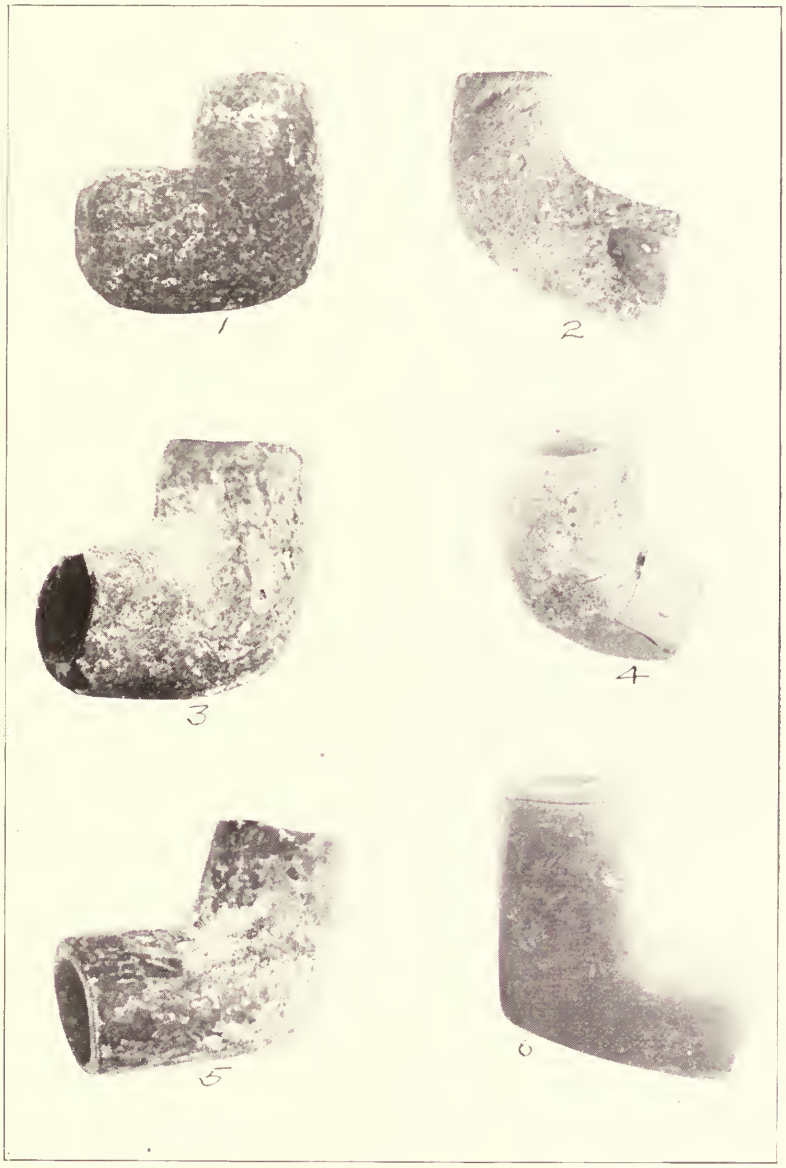


FIG. 56. Pipes finished and unfinished; ¾ size.

are fine examples of the perfectly finished pipestone pipe. No. 2 is a pipe made of pottery clay, tempered with pieces of broken mussel shell. This pipe is the only one of its kind found in the village. No. 4 is made of limestone, and No. 6 is of waverly sandstone. The pipe is decorated with an incised line near the top of the bowl.

Another type of pipe found in the village by Mr. Wertz and not by our survey, is shown in Fig. 57, Nos. 1, 2, 4, 5 and 6. No. 1 is made of waverly sandstone; No. 2 of dark red pipestone; Nos. 4 and 5 of mottled dark gray pipestone, and No. 6 of light gray pipestone. Nos. 3, 7, 8 and 9 of Fig. 57 are very different from Nos. 1, 2, 4, 5 and 6 of the same figure, although found associated with them. Nos. 3 and 7 are made of red pipestone; No. 8 of mottled red pipestone and No. 9 of waverly sandstone.

Fig. 58 shows nine very interesting pipes. No. 3 and No. 6 are square, instead of the round type so frequently met with, and Nos. 4 and 5 were repaired after having the stem broken and were no doubt used until lost. No. 8 is an unfinished pipe of limestone of unusually large size. No. 9 is a small platform pipe made of steatite.

Our survey did not find the tubular form of pipe, but Mr. Wertz was successful in finding this form. Fig. 59 shows two forms of the tubular type, both made of pipestone. No. 1 has a very large perforation extending almost its entire length, while in No. 2 the perforation is large but gradually tapers from almost the center to a small opening at the stem end. Fig. 60 is an unfinished platform pipe of unusual size found by Mr. Wertz. The pipe is made of limestone and shows that but little work other than pecking has been done upon it.

The pipes found in the village number perhaps fifty, including broken and perfect specimens, and the number accessible to us in Mr. Wertz's collection exceeds twenty specimens, making a total of seventy pipes from this site. To this number should be added the former collection of Mr. S. P. Adams, numbering over thirty specimens, representing all the types above described. The collection of Mr. Adams was well known to

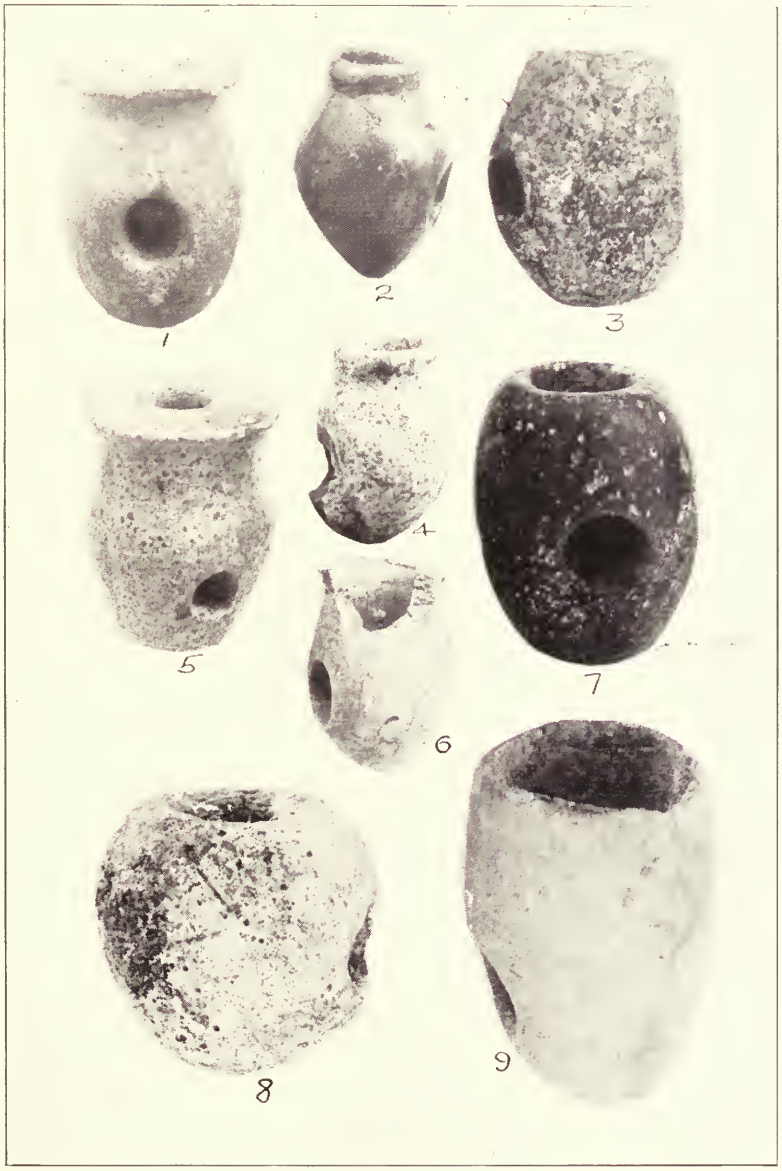


FIG. 57. Pipes made of Ohio pipestone and waverly sandstone; 7/8 size.

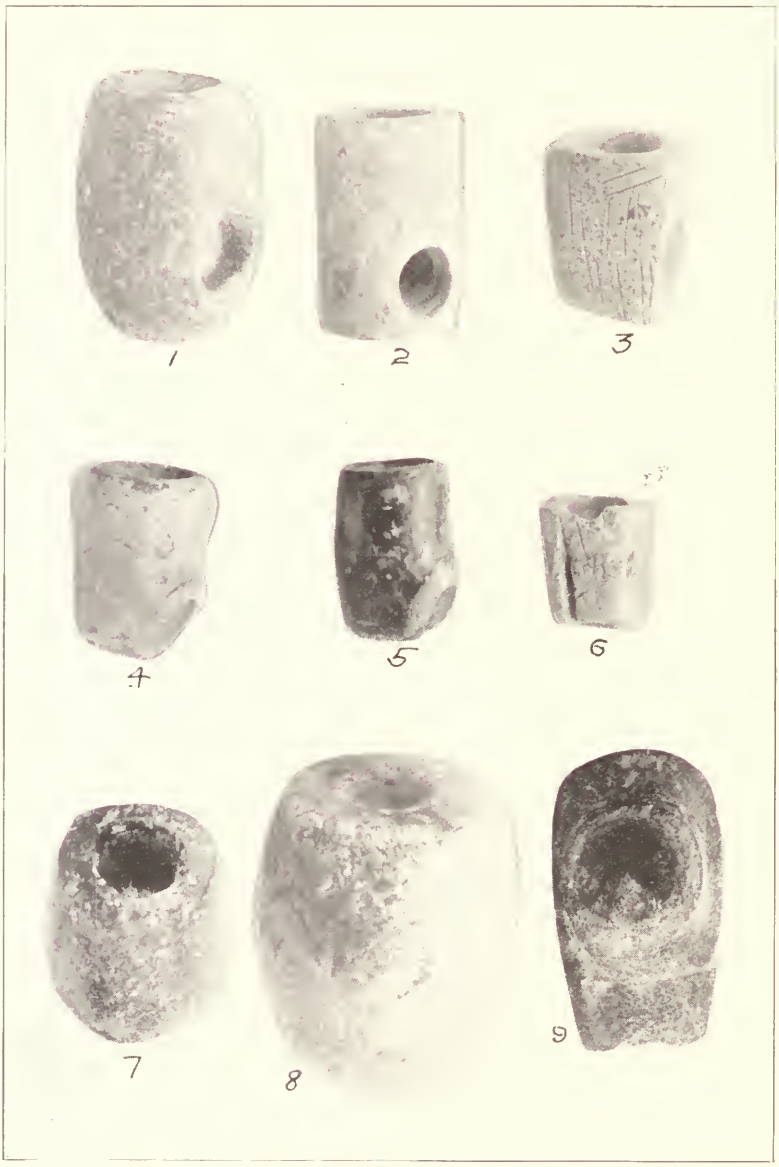


Fig. 58. Pipes made of Ohio pipestone, limestone and steatite; ⅔ size.

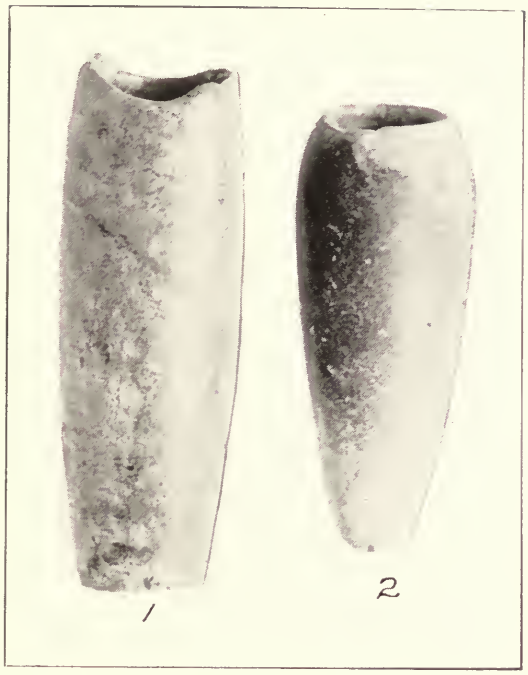


FIG. 59. Tubular pipes made of Ohio pipestone; 3/4 size.

FIG. 60. Unfinished platform pipe made of limestone; 7/8 size.

the writer, as it was on deposit for ten years in the Museum of the Society.

Mr. John Welty of Portsmouth also collected many pipes at the Feurt site, and I have a record in my note-book of twenty-five pipes, which I readily identified as coming from the Feurt site, and I suspect, from what Mr. Welty says, that twice that number would be short of the actual number he found at this village. Mr. Paul Esselborn, Mr. Morris Hicks, and I am told other collectors, have specimens of pipes from this village site.

The few specimens of pipes found at Baum's and Gartner's if placed with the Feurt pipes, could not be distinguished from them, and the same is true of the pipes found by Smith in the Kentucky site.

COPPER OBJECTS FOUND IN THE VILLAGE.

Copper objects were not found by our survey in the village site, but we were successful in securing copper in the form of ornaments in two graves already described, while Mr. Wertz found a small copper necklace with a burial. This necklace is shown in Fig. 61, No. 6. Mr. Wertz also found many pieces of copper in the village site proper, both upon the surface and along the steep bank, which from time to time would cave off and expose to view parts of the rich village site. Many of these pieces were ornaments that had been bent and hammered and their identity destroyed. One of these is shown in No. 3 of Fig. 61. This specimen represents a reel-shaped ornament similar to those found in the Tremper mound across the river from the Feurt site.

Mr. Wertz had at one time a large number of copper pieces from this site, all showing mutilation, but these unfortunately were lost in a fire that destroyed his residence. In this fire an excellent collection from this site was entirely lost, and the collection he now possesses has been gathered since that time. S. P. Adams, a local collector of Portsmouth, who several years ago disposed of his collection, made in the lower Scioto and along the Ohio in close proximity to Portsmouth, had three

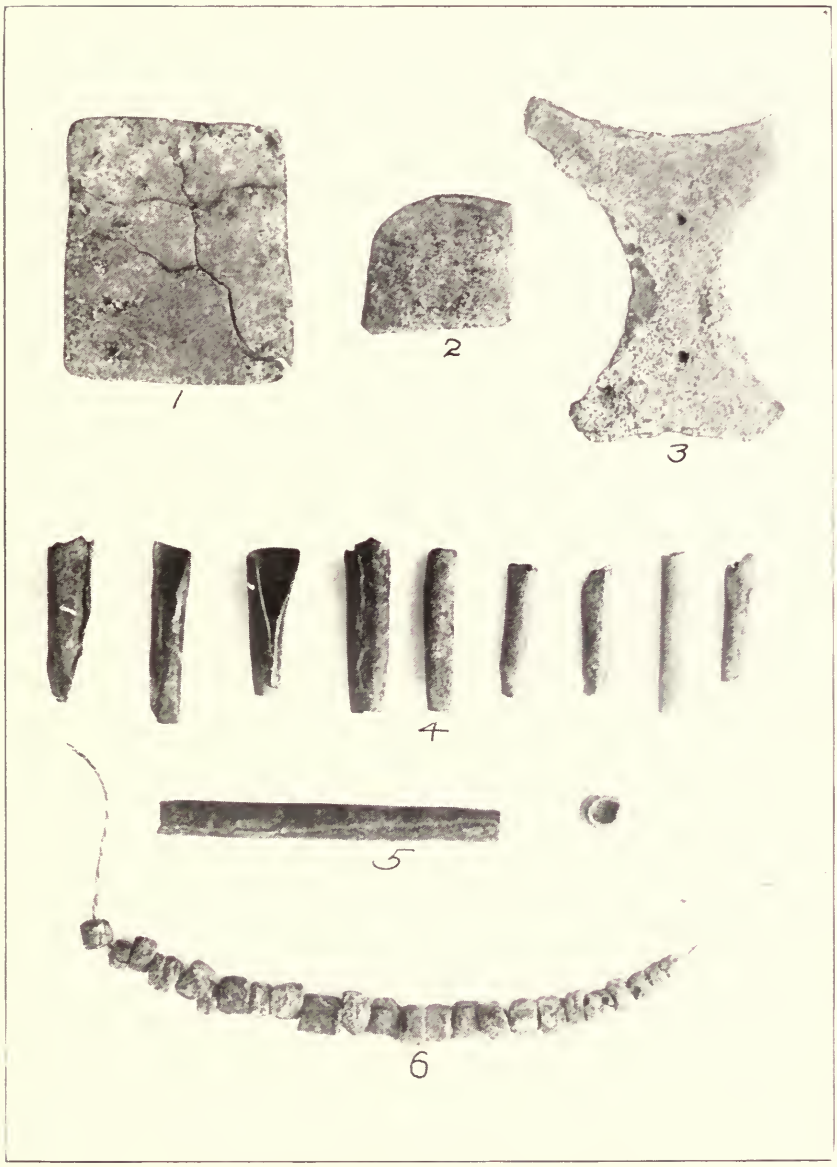


FIG. 61. Objects made of copper: $\frac{2}{3}$ size.

specimens of copper, having their identity destroyed in the same way as those found by Mr. Wertz.

The finding of so many destroyed copper pieces, foreign to this culture, is almost positive evidence of unfriendly contact with their neighbors across the river. For a time perhaps the contact of the two cultures was friendly, as indicated by the objects of copper found in the graves of the burials in the mounds, but apparently later this contact was hostile and the objects captured from enemies were brought to the village, there to be battered into shapeless masses, and thrown into the refuse heaps. In some cases they may have been cached away in their village, as was the case with finds in a village of this same culture, just outside the walls at Fort Ancient.* The examination of the Feurt site made with the express purpose of ascertaining the extent of this unfriendly contact, demonstrates that for a time they evidently lived in peace and had tribal trade between them.

At Baum's a few copper beads were found associated with shell beads on the same necklace, the only instance of copper being found during the entire exploration. At Gartner's no copper was found, nor did Smith find copper in the Kentucky site, showing that in these three important Fort Ancient culture sites, copper objects were practically unknown.

BONE IMPLEMENTS.

Bone implements of certain kinds were found promiscuously scattered throughout the village in the greatest profusion. The most prominent were the awls or perforators, and these were made of practically every bone having the proper length and adaptability. Some of the awls were mere splinters broken from the large leg bones of the deer, elk and bear and sharpened at one or both ends: others were made of the same bone, but handsomely decorated and polished; still others were made of the ulna of the deer and elk, of the larger animals, while the same bone of all the smaller animals was used for the same purpose. The tarso-metatarsus of the wild turkey was used for

*Described in Explorations of the Tremper Mound by Mills.

making awls, as were many of the wing bones of wading birds, like the blue heron.

Polishing stones and whetstones used in the manufacture of bone awls were frequently met with in the tepee sites. An

Fig. 62. Polishing stones made of waverly sandstone; ⅛ size.

excellent example of these polishing stones is shown in Fig. 62. They are mere slabs of waverly sandstone, showing great use, some having grooves worn into their faces from use in sharpening the bone into the desired shape.

BONE AWLS MADE OF THE ULNA OF THE DEER.

Fig. 63 shows a typical collection of the awls made from the ulna of the deer. Some are long, as shown in No. 1; some are short, as in No. 6; some are sharp and slender like that in No. 7 and others are blunt, as shown in No. 4. All four classes were duplicated many times in every part of the village. Some of these awls may have been used for making perforations through which thread or sinew was passed, when skins were used for making clothing and moccasins; some may have been used in the making of pottery or in weaving; others may have served as forks in eating, while the blunt and strong awls were perhaps used for opening the mussel shells found so abundantly in the village.

A very interesting double-pointed awl, frequently met with was made only from this bone. It is shown in Nos. 10 and 11. The two points of this class of awls are of unequal length, the longer point being the side opposite the joint. This form may have been used in weaving or in decorating pottery. A very useful awl was made from the ulna of the elk. Many of these were from six to eight inches in length, were very strong, and most of them bluntly made. Very good examples of this awl are shown in Fig. 64. These implements certainly were of importance about the home and may have been used for opening the large mussel shells in order to secure the mussel for food.

Very fine examples of awls made from ulnas and other bones of large and small animals are shown in Fig. 65. No. 1 is made of the metapodial bone of the deer. This specimen had formerly been made into a scraper used in dressing skins during the tanning process, as were practically all of these bones. The heavy use to which these implements were subjected caused many of them to break at the center, rendering the implement useless. The distal end of the broken scraper was frequently made into a blunt awl. The perfect scraper is shown in Fig. 73.

Nos. 2, 3, 4, 5 and 6 are made from the ulna of the gray fox, wild cat and gray wolf; No. 7 is made of the ulna of the black bear; Nos. 8, 9 and 10 are made of the penis bone of the black bear; Nos. 11 and 12 are made of the heavy leg bone

FIG. 64. Awls made from the ulna of the elk; 1-2 size.

FIG. 65. Awls made of the bones of various animals; 1-2 size.

FIG. 63. Awls made of the ulna of the deer; 1-2 size.

of the elk; No. 13 is made from a part of the shoulder blade of the deer; and No. 14 is made of the lower jaw of the deer.

Fig. 66 shows twelve awls made from the tarso-metatarsus of the wild turkey, six of which are decorated with notches cut upon the sides, and the other six plain. Awls made of this bone were very abundant in the village and several hundred in perfect condition were found. In practically every village site of this culture the awl made from this bone is present and very frequently exceed in numbers all other classes of awls. Another class of awls so common to this culture, and found in such large numbers in the Feurt village, is shown in Fig. 67. A careful study of the specimens shown in this figure in comparison with those just described, is convincing proof that they may have been used as supports to feathers and other objects worn in the hair as ornaments. In support of this theory is the finding of several of those decorated awls placed under or at the side of the head of the skeleton. However, two of the largest and finest specimens shown in Fig. 67, Nos. 4 and 7, were found beneath the body of the skeleton. These measure nine and eight inches respectively. All specimens in this figure were made from the strong heavy leg bones of the elk and deer. Much time and patience were required in fashioning any one of these awls. Nos. 1, 2, 3 and 8 were found isolated in the village, and Nos. 4, 5, 6 and 7 were found with burials. The eight specimens shown in Fig. 68 are similar to those shown in Fig. 67 and are made from similar bones. No. 1 has a decorated head, but no attempt toward making an effigy of a bird or animal, as was found at Gartner's. Nos. 2, 5 and 7 are awls having a spatula-like end; Nos. 3 and 8 have the point end decorated; No. 3 has an enlarged end and No. 8 has five indented lines circling the point.

Fig. 69 shows seven examples of large awls made from various bones of animals. Nos. 1, 2, 3 and 4 are made from bones of the bear; No 5 is round, and is made from the heavy leg bone of the deer; No. 6 is flat, with spatula-like end and enlarged head; No. 7 is made of a flat heavy bone of the deer.

Fig. 70 shows nine large awls made from various bird and animal bones. No. 1 is perhaps that of the radius of the blue heron; Nos. 2 and 3 are made of the bones of the bear; No. 4

FIG. 66. Awls made from the tarso-metatarsus of the wild turkey; ½ size.

Fig. 67. Large decorated awl; $\frac{1}{2}$ size.

FIG. 68. Large plain and decorated awls; $\frac{3}{4}$ size.

Fig. 69. Plain awls; $\frac{2}{3}$ size.

FIG. 70. Large awls; ⅞ size.

is from the tarso-metatarsus of the blue heron; No. 5 is made from the ulna of the blue heron; Nos. 6 and 8 are made from leg bones of perhaps the wild turkey and No. 9 from the radius of the gray wolf. Fig. 71 shows a number of awls of special interest. No. 1 is a broken flat awl showing much labor in its manufacture; No. 2 is the broken spatula-end of one of the finest awls found in the village; No. 3 is also a broken awl, but shows an unusual finish and an enlarged decorated end; No. 4 is made from a flat heavy bone with one end finely sharpened, and the other end brought almost to a point; No. 5 is one of the smallest awls found, and could not be classed as a pin, for these were not found in the village. No. 6 is one of the well-wrought double-pointed awls frequently met with; Nos. 7, 8 and 9 are very small thin awls requiring much patience and even skill to manufacture, as they were made from the thick heavy bone of the deer.

From the number of types of awls found by our survey, this village certainly must have been a great manufacturing center for bone implements. The small double-pointed bone awl, or pin, was very abundant at Baum's, but entirely absent at Feurt's and but few were found at the Kentucky site by Smith. The larger bone awls shown in Figs. 67 and 68 were not found by Smith at the Kentucky site, but were found sparingly at Baum's and at Gartner's in Ohio.

No. 6 of Fig. 69, the spatula-like awl, was duplicated by Smith in the Kentucky site. Practically all other awls made of the various bones of animals and birds found in such profusion at Feurt's were found both in the Ohio sites and at the Kentucky site.

BONE NEEDLES.

Bone needles having an eye are shown in Fig. 72 which exhibits the implement in the process of manufacture, and the perfect needle as well as those broken in use. As is well known the true needle with an eye is considered a very rare implement, because the awl would take its place for sewing. The bone needles shown in the figure were made for the most part of the rib bones of various animals and range in length from three to eight inches. Nos. 1, 4, 8 and 9 show practically all the forms

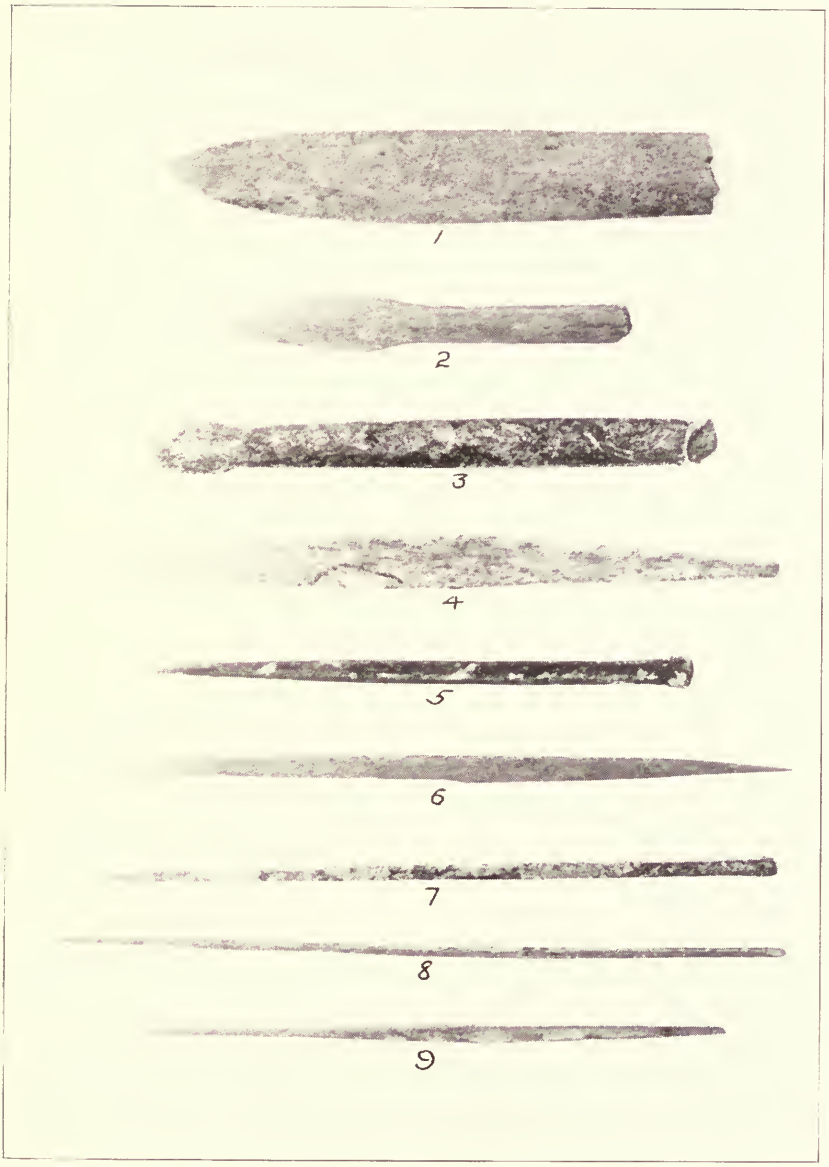


FIG. 71. Various forms of bone awls; 7/8 size.

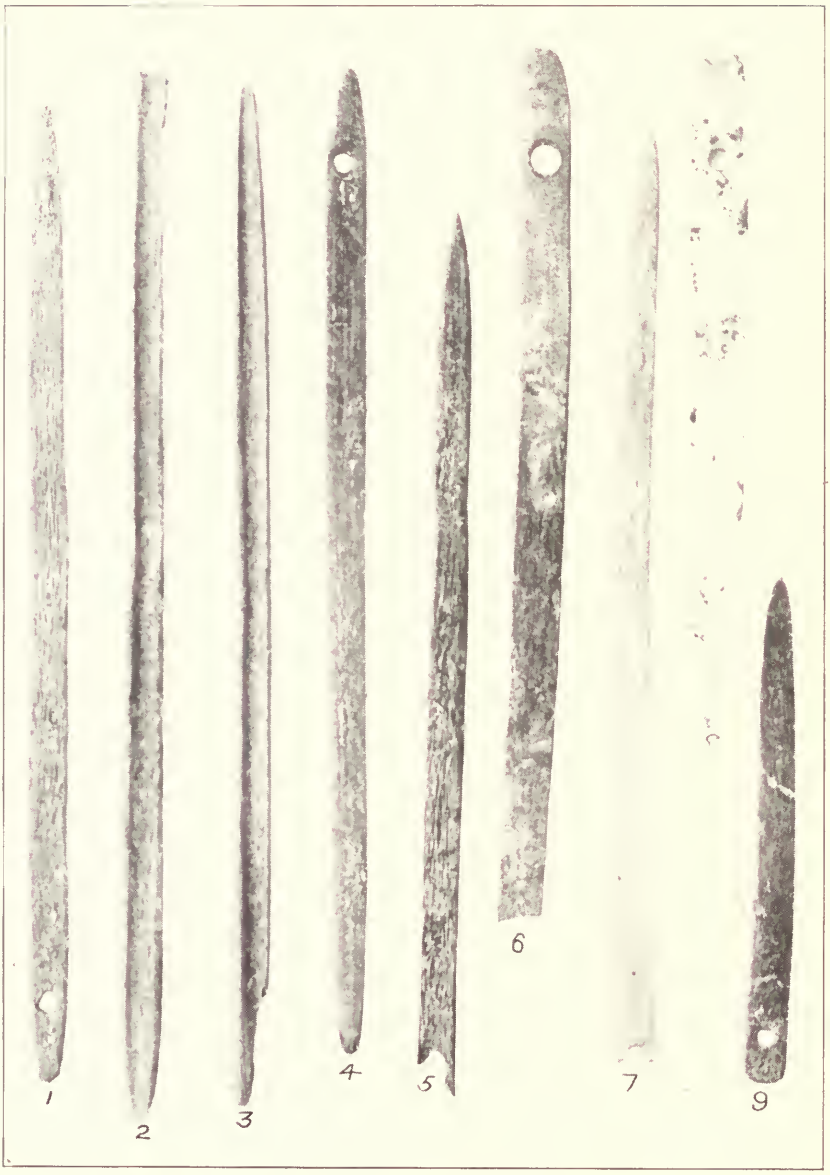


Fig. 72. Bone needles; 7/8 size.

of needles found in the village. Nos. 5 and 7 show the needles broken at the eye, the weakest part. A number have been found showing the repair of the needle when broken at the eye by boring a new hole for the same, this making the needle a trifle shorter. No. 6 shows the point broken off, which is very unusual; Nos. 2 and 3 are perhaps unfinished needles, made from the long leg bones of wading birds. This form of bone needle was found at Baum's and at Gartner's but not in such large numbers at Feurt's, and Smith found in the Kentucky site what he considers a needle with an eye. This needle is practically round, while in the Ohio sites of this culture the needles found are always flat.

BONE SCRAPERS.

Bone scrapers made of various bones of the legs of deer and elk were found in abundance in the village site. However, the scraper for the most part had been broken while in use and the broken pieces were evidence of the hard usage to which they were subjected in the preparation of skins. The broken pieces of the scrapers were sometimes reworked into awls, but for the most part they were discarded.

Fig. 73 shows a perfect scraper made from the lower leg bone of the elk. Practically all the metapodial bones of the elk had been worked into this kind of implement, as were the femurs of the elk. In Fig. 73 are shown three specimens of the lower leg bone of the deer. This bone was extensively used for this purpose, although many were found that had been broken to extract the marrow from the central cavity for food. The specimen adjoining the cut of the perfect scraper in Fig. 73 shows the first steps toward making it into this useful implement. The next specimen shows a little more work, the cutting being carried to the cavity of the bone, while the next shows that an accident happened, and that the bone was broken and then discarded. Perfect scrapers were not found in abundance at the Feurt site, but their use was general, as broken specimens were found sparingly in all parts of the village. At Baum's the scrapers were very abundant, all being made of the metapodial bone of the deer and elk, while at Feurt's the femurs very often were used.

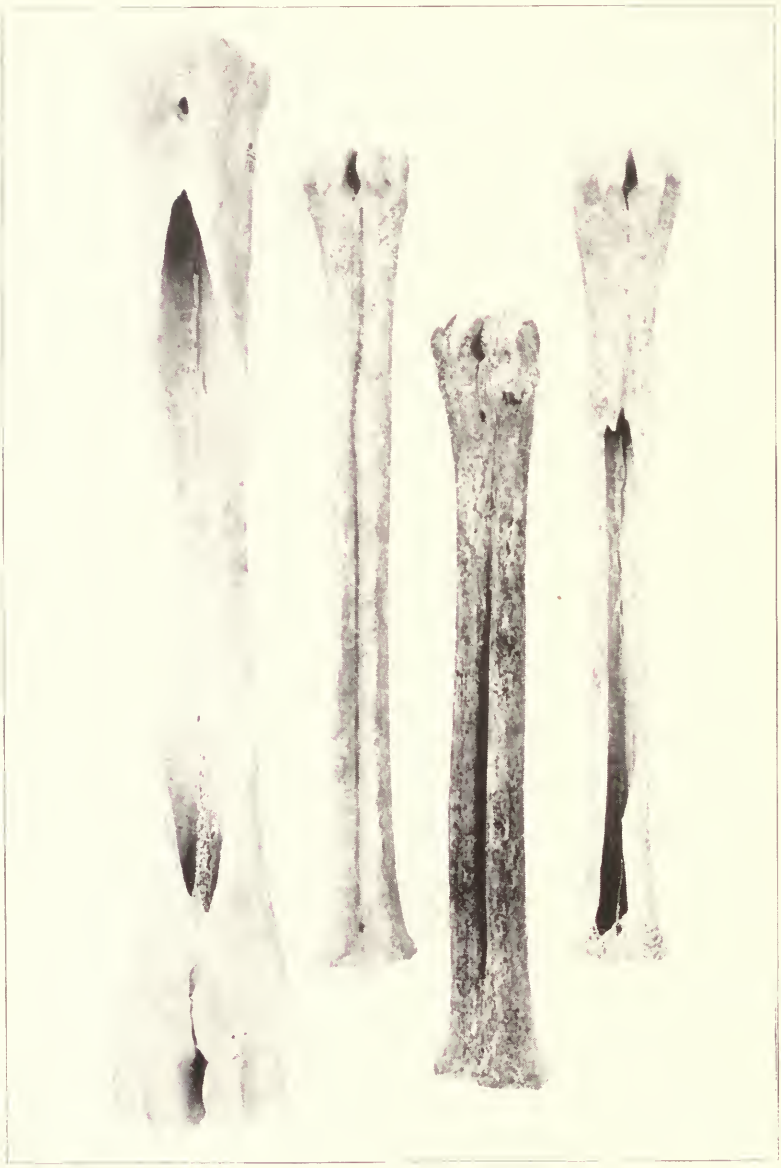


Fig. 73. Perfect and unfinished scrapers; ¾ size.

At Gartner's also this implement was found in abundance. Smith found the scraper in the Kentucky site, but not abundantly.

CELT-LIKE SCRAPERS.

One of the interesting types of specimens found in the village is the celt-like scraper, made for the most part from heavy elk horn. The part usually selected was between the beztine and the trestine, and required much labor in manufacture, but when completed would meet the needs of a scraper perhaps better than those described above. A very good example of the scrapers made from horn and bone are shown in Fig. 74. Some were notched for attachment to a handle, others were plain. The scrapers made of bone, are shown to the right of Fig. 74. Fig. 75 shows a collection of narrow chisel-like scrapers, which were perhaps as abundant as the broader scrapers shown in Fig. 74. The celt-like scrapers found in goodly numbers at the Feurt village were also found at Baum's and Gartner's and by Smith at the Kentucky site. All are made in the same general way.

CUT AND WORKED BONE.

The finding of many hundreds of cut and worked bones in the Feurt site showed how generally bone implements were used. Many of these bones show merely an attempt to cut a hollow bone in the form of a cylinder, or into sections for beads. Bones showing practically every stage in the manufacture of implements were readily secured. Many bones, after much labor had been expended upon them, were found defective and were rejected, while others were broken after much grinding and polishing had been done. Figs. 76 and 77 are representative examples of cut and worked bone found in the Feurt site. At Baum's and at Gartner's worked and cut bone was found everywhere in the village. Smith found in the Kentucky site bones cut and worked in the same way. The manner of cutting and polishing the bone was practically the same in all of the Ohio sites as well as at the Kentucky site.

Fig. 71. Celt-like scrapers made of elk horn; $\frac{3}{4}$ size.

Fig. 75. Chisel-like scrapers made of elk horn; 7/8 size.

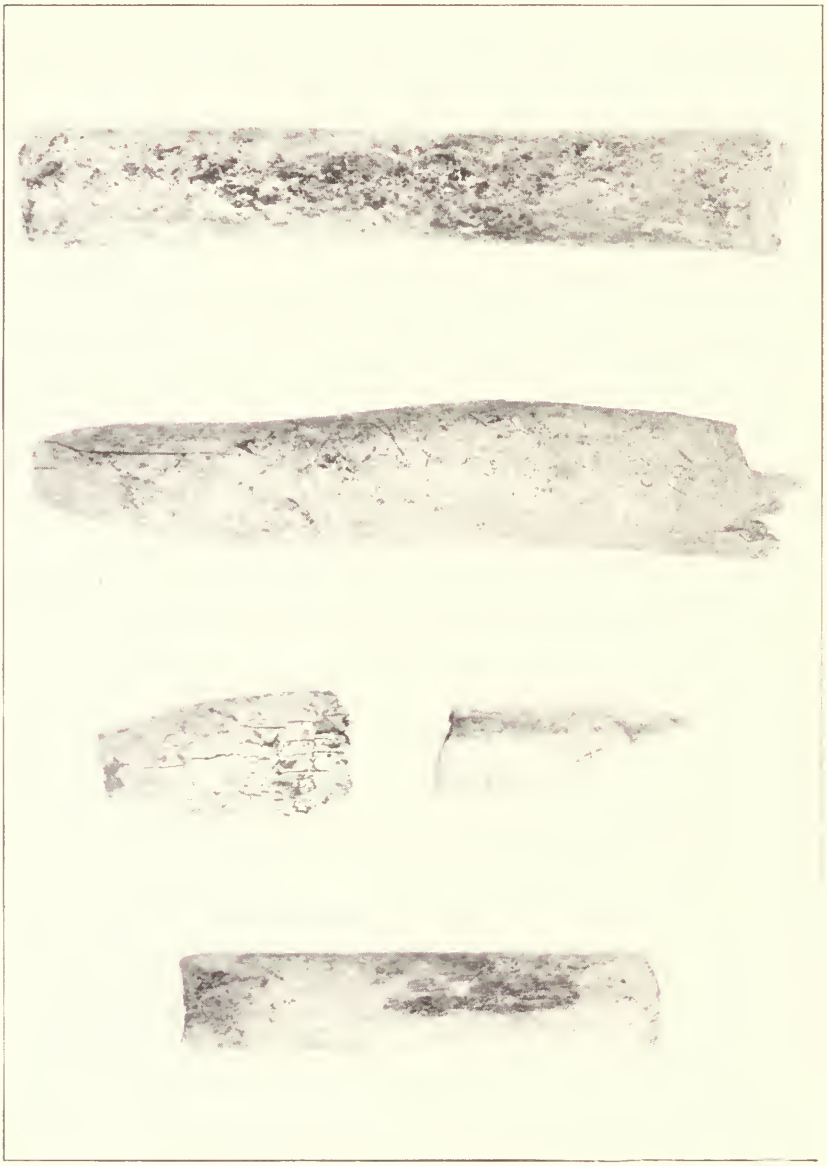


FIG. 76. Cut and worked bone; $\frac{2}{3}$ size.

FIG. 77. Cut and worked bone; $\frac{2}{3}$ size.

ARROW AND SPEAR POINTS OF BONE.

Arrow and spear points made of bone were numerous in the village and were made for the most part of the tips of deer horns. The Feurt peoples not only excelled in chipping the arrow point from stone, but they made excellent points from the antler tips. Fig. 78 shows good examples of antler arrow and spear points. The arrow points are of two kinds, those pierced with a small hole for attachment to the shaft by the use of a string, and those unperforated. The perforated specimens are illustrated in the seven specimens shown at the left of Fig. 78. The second kind of arrow points were more numerous than the perforated type and are shown in the five specimens directly to the right of the perforated arrow points in Fig. 78. The three large specimens to the right in Fig. 78 were doubtless used for spear points.

At Baum's and at Gartner's bone arrow points and spear points were found in abundance, both in the perforated and plain types, the process of manufacture being exactly the same, as shown by the number of unfinished specimens found in the village. Caches of deer tines ready for making into points were found at Baum's and at Gartner's and many such caches were in evidence at Feurt's. At Baum's and at Gartner's deer toes were made into arrow points, but not a single specimen was found in the Feurt site made from this bone. Smith found arrow points made of the tips of deer horn in the Kentucky site, resembling those found in the Ohio sites.

FLAKING TOOLS.

The flaking tools found at the Feurt site were of two kinds, both being found in great numbers, and for the most part all were made of deer and elk horn. Fine examples of one kind are shown in Fig. 79. All are cylindrical in form and vary in length from one and one-half inches to five and one-half inches. One end is usually cut at right angles, while the other end is made oval. Many of the specimens in Fig. 79 show use as flaking tools, one end being usually battered, from being struck by the stone hammer in making the large flakes, and in the manufac-

FIG. 78. Bone arrowpoints made of antler tips; ⅞ size.

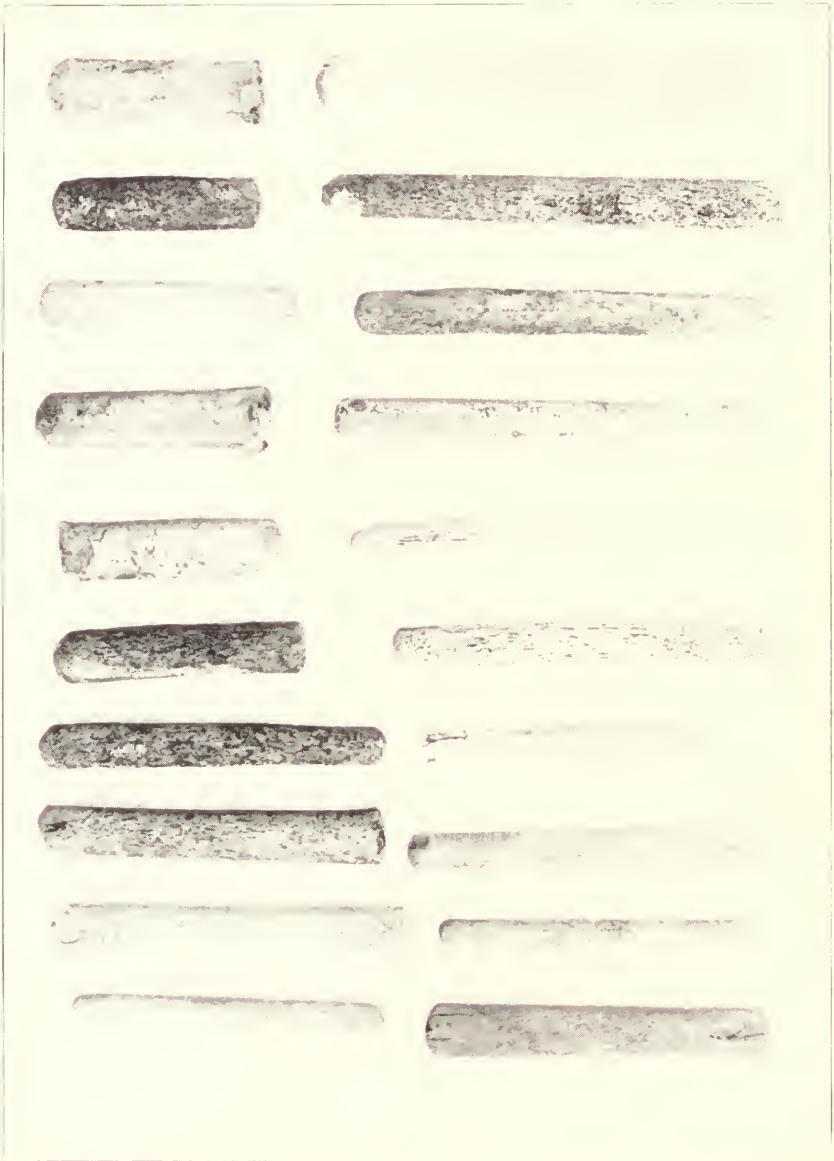


FIG. 79. Flaking tools made from deer and elk horn; ¾ size.

ture of the long knives and spear points. The use of the flakers shown in Fig. 79 requires two persons. The process consists in holding the flint to be flaked in the palm of the hand, protected with a piece of buckskin and held firmly by the fingers of the same hand, while the other hand was used to hold the flaker in position. The second person then would strike the flaker with a stone hammer. The angle at which the flaker is held against the flint determines the length of the chip. The second kind of flaking tool, shown in Fig. 80 was perhaps used in the manufacture of small arrow points. The large implement in the center of the figure however, possibly was used as a digging tool. This implement is made of elk horn and is fourteen inches in length. All the other implements in Fig. 80 doubtless were used for flaking the small arrow point, and did not require the assistance of a second person. The process of manufacture of the arrow point is very simple, all that is required being the flint blocked cut into form with a stone hammer, a piece of buckskin to protect the hand, and a tine of deer horn slightly worked at the point into a suitable implement. The flint piece to be chipped into form is held in the left hand, protected by the buckskin, by the fingers which serve as a vise in holding the flint. The flaking-tool is then taken in the right hand and the point placed against the under edge of the flint at a point where the artificer wishes to remove a chip. A steady down and under pressure will produce the necessary conchoidal fracture. The angle at which the flaker is held will determine the length of the chip.

Fig. 81 shows the way deer horn is cut into suitable pieces to be made into flakers. The process is very laborious and requires much grinding and cutting. During the entire exploration in the Feurt site not a single perfect horn was found, all having been worked into implements or the cut pieces stored for future use.

FISH-HOOKS FOUND IN THE VILLAGE.

Fig. 82 shows several fish-hooks complete, several that were broken in use, and several showing the different stages in the manufacture of this very important implement. The hooks were

Fig. 80. Flaking tools made of deer and elk horn; ½ size.

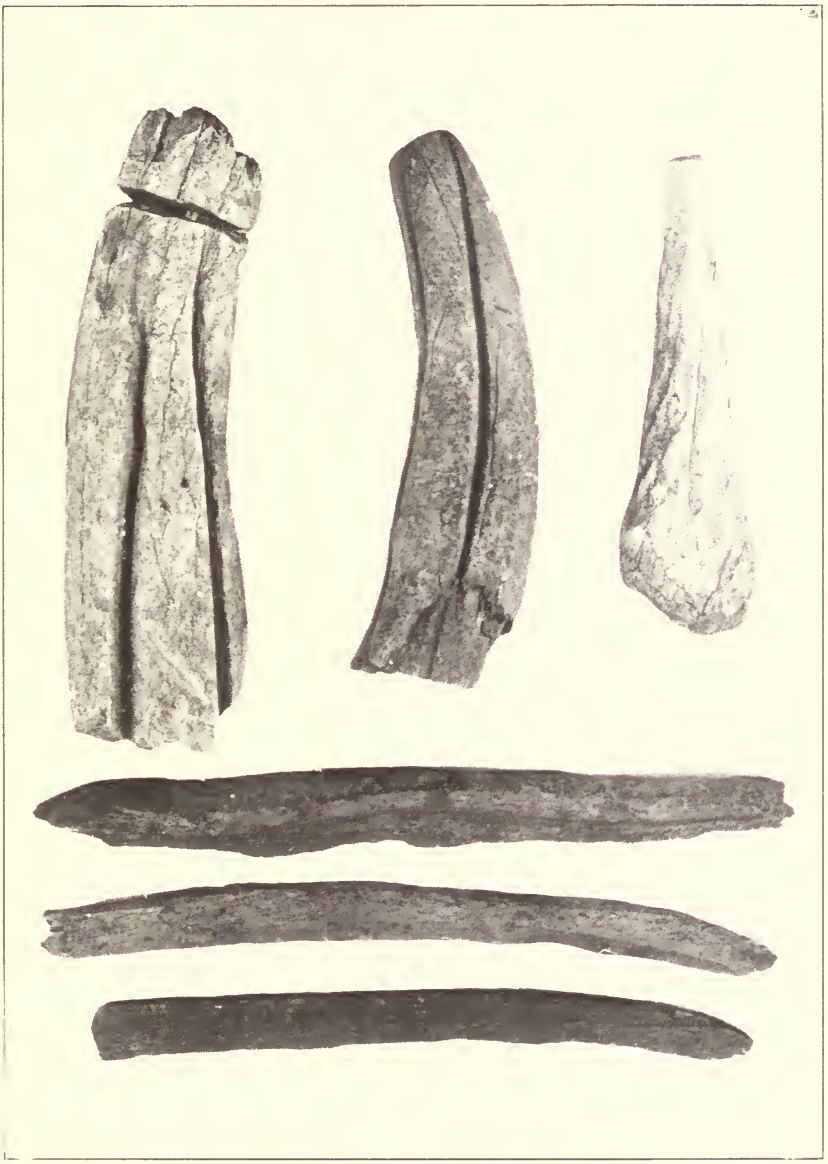


FIG. 81. Flaking tools in the process of manufacture; ½ size.

FIG. 82. Specimens showing stages in the manufacture of the fish hook; ½ size.

not so abundant as at Baum's and at Gartner's, but the mode of manufacture was exactly the same, for a minute description of which the reader is referred to the report upon the Baum village.* Smith found in the Kentucky site fish-hooks similar to those found at the three Ohio sites, but evidently did not secure specimens showing the various stages in their manufacture. However, from the general appearance of the hook and the bone used in making the same, one must believe they were similarly fashioned.

WHISTLE-LIKE OBJECTS OF BONE.

Whistle-like objects shown in Fig. 83 are of special interest, since not a single specimen was found either at Gartner's or at Baum's, although these sites were of the same culture as Feurt's. Smith found the whistle in the Kentucky site and many examples have been found at various sites along the Ohio river. Smith suggests that perforated bones were perhaps used "in religious ceremonies rather than for animal calls." The whistle-like specimens shown in Fig. 83 were made of the radius of various large birds such as the eagle, hawk, wild turkey and others; by cutting off the ends, thus leaving a hollow straight cylinder, as shown in the first three specimens of Fig. 83. Many specimens similar to these were found and several show where they had been marked for drilling. The holes were drilled with a flint drill, and were usually three in number. Now and then one would be found with two holes, and occasionally one with four holes. The holes were usually round, but a number show an oblong hole. Frequently the oblong hole would show that it was enlarged from the round hole by burning. The holes for the most part were bored in a straight line, usually equidistant apart; however one specimen was found (shown in the center of the lower row in Fig. 83) where two holes were in line but the center hole was to one side. Smith found a specimen in the Kentucky site with seven holes, complete, and the eighth hole started, while others found by him varied as to number of holes and in irregularity as to distance from each other.

*Certain Mounds and Village Sites in Ohio. Vol. 1.

FIG. 83. Whistle-like objects of bone; $\frac{2}{3}$ size.

CUT LOWER JAW OF THE DEER.

Fig. 84 shows the cut lower jaw of the deer, found in such abundance in the village, and certainly generally used, as several hundred were found.

No. 1 of Fig. 84 represents one-half of the lower jaw of a mature deer, having the posterior portions of the jaw broken away which is usual in all the jaws used. No. 2 shows a discarded jaw, the anterior part of which had been cut away and found defective. The Indian method of procedure was to cut a bone on each side slightly, and then break it off. Very often the bone would be so splintered as to render it useless. This happened with No. 2 and the jaw was discarded. No. 3 had a double use as it would serve the same purpose as No. 1, besides being used as an awl formed by sharpening the anterior part of the jaw. No. 4 of Fig. 84 has both the posterior and anterior part of the jaw cut away. However, the greater number of jaws found were like No. 1, the object no doubt being to use the teeth as a grater for green corn,* for which purpose they would serve admirably. Cut deer jaws similar to those described above were found at Baum's and Gartner's, and Smith found the jaw cut in the same way in the Kentucky site.

ORNAMENTS MADE OF BONE.

Ornaments made of bone were found in great numbers over the entire site, especially in the form of beads. The beads were of different lengths ranging from one-half inch to three inches, and for the most part were made of the hollow wing bones of large birds. They were usually plain and undecorated, except that now and then one would be found having incised lines encircling it. Many of the beads show long use, being worn and highly polished

Other very important ornaments found in the village were cut jaws of various animals, such as bear, mountain lion, gray wolf, gray fox and wildcat. No. 3 of Fig. 85 shows the posterior part of the upper jaw of the gray wolf. Nos. 4, 6 and 7 are parts of the lower jaw of the gray fox, and No. 5 of Fig.

*Archaeological Report of Canada. 1913.

FIG. 84. Implements made of the lower jaw of the deer; ¾ size.

FIG. 85. Objects made of bone and the jaws of animals; $\frac{3}{8}$ size.

85 is the lower jaw of the wildcat, having the posterior part cut away. No. 8 of Fig. 85 shows a part of a triangular bone perforated with holes. Nos. 12 and 13 of Fig. 85 are bone pendants made from the shoulder blade of the deer. No. 12 is plain, and pierced with a counter-sunk hole for attachment, as shown in No. 13, which is decorated on the edges with notches. No. 14 of Fig. 85 is a bone pendant made in the form of an arrow head and pierced with a small hole for attachment.

ORNAMENTS MADE OF TEETH OF ANIMALS.

The black bear, and the gray wolf were animals highly prized by the people of the Feurt village, judging from the perforated canines found so abundantly in the village. Fig. 86 shows a collection of canines representing both the black bear and the gray wolf. They were found promiscuously in the village site, especially in the tepee sites, and were no doubt accidentally lost, as practically all of the specimens found were perfect. The teeth of the deer were never used for ornament, but practically all of the teeth of the elk were used. Fig. 87 shows the molars, canines and incisors of the elk, pierced with holes for attachment and perhaps used as ornaments. The other teeth shown in Fig. 87 are the canines of the gray fox, raccoon, opossum and wildcat. Likewise, all these teeth were abundantly found in the perfect state, and like those of the bear and wolf were accidently lost.

Fig. 88 shows parts of broken fossil molar teeth of the mammoth and the mastodon. These specimens were found promiscuously scattered throughout the village. The perfect fossil teeth were no doubt found by the Feurt peoples and carried to their village and there worked into ornaments. The parts shown in the figure doubtless were rejected, being broken in such a manner as to be unfitted to their use. Nos. 2, 3 and 4 of Fig. 88 belong to the mastodon and are broken pieces of the V-shaped ridges covered with enamel.

Nos. 1 and 5 of Fig. 88 belong to the mammoth, a true elephant, the teeth of which are characterized by plates of enamel set upright in the body of the tooth. No. 1 shows one

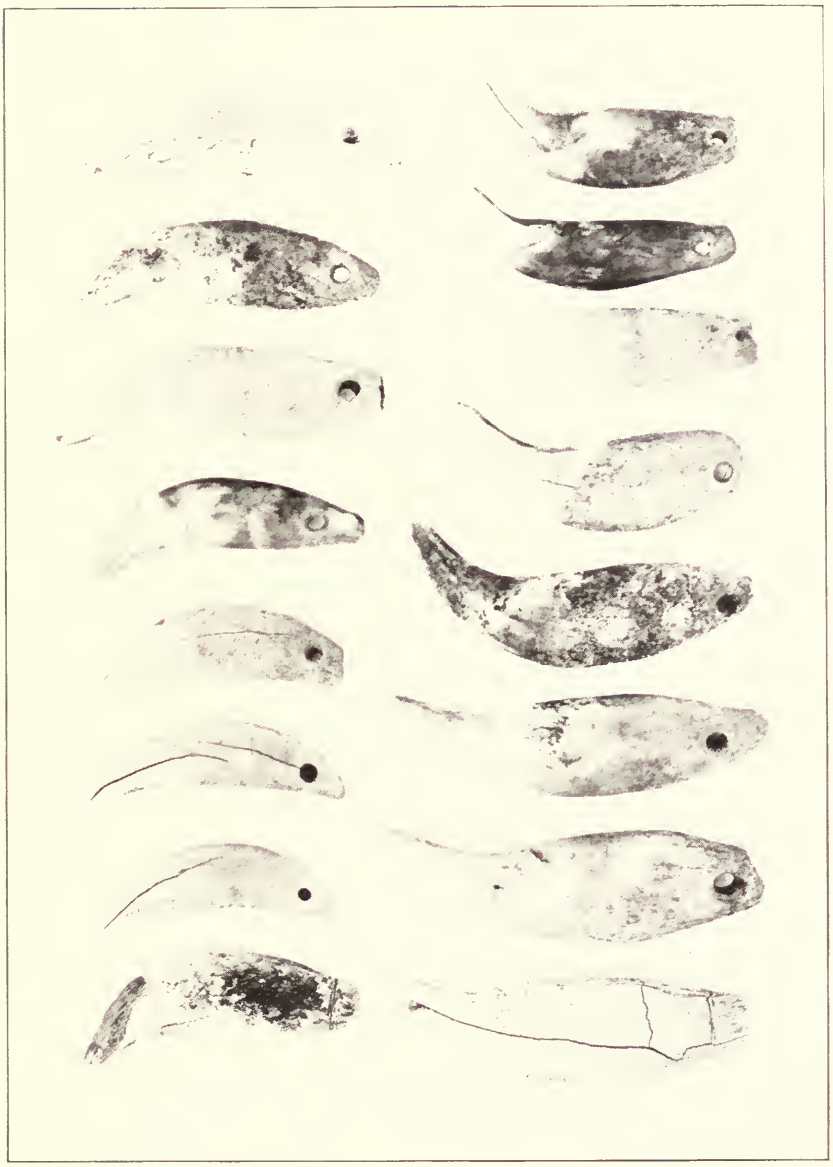


FIG. 86. Canine teeth of the black bear and gray wolf; ⅞ size.

Fig. 87. Ornaments made of teeth of various animals; ⅞ size.

FIG. 88. Broken molars of the mastodon and the mammoth; $\frac{3}{5}$ size.

of these plates ready to be worked into form. No. 5 shows two of these plates still attached. The top shows the grinding surface of the tooth. No ornaments fashioned from the teeth of the mastodon or mammoth were found in the village, but doubtless ornaments may be found at some future time. No evidence was found at Baum's or at Gartner's showing the use of fossil teeth, and Smith makes no record of finding mastodon or mammoth teeth at the Kentucky site. However, objects made of the fossil tusk of the mastodon or mammoth have been reported from various burials found in Ohio, and the Museum contains several specimens purporting to come from these burials.

ORNAMENTS OF SHELL.

Ornaments made of ocean shell as well as of the common mussel shell were found near the surface of the village. Our own survey was unable to find but few ornaments made of shell, but Mr. Wertz secured many examples of cut shells, both plain and ornamented, and perforated for attachment as pendants. Fig. 89 shows a number of cut and ornamented shell pendants and gorgets. Nos. 1, 2 and 3 are specimens made of mussel shells; No. 4 a gorget made of ocean shell, pierced with two holes; No. 5 is perhaps part of a large decorated gorget, which had been broken and reworked into form; Nos. 6 and 7 are pendants with enlarged ends, made from ocean shell; Nos. 8, 9, 10 and 11 are pendants made of ocean shell, decorated and provided with perforations or incised lines for attachment; No. 12 is similar to No. 5, and made from a broken decorated shell object; Nos. 14, 15, 16, 17 and 18 are shell pendants; Nos. 19, 20 and 21 are unfinished shell pendants; No. 22 is an unusual pendant with two perforations near the center for attachment. No. 23 is an effigy of an eagle claw, made of ocean shell.

Pendants made of the incisor of the elk, (No. 24) were frequently found, and all were perforated for attachment.

No. 25 is a pendant made of the canine tooth of the elk. Specimens of this kind were not met with in such numbers as were found at Baum's.

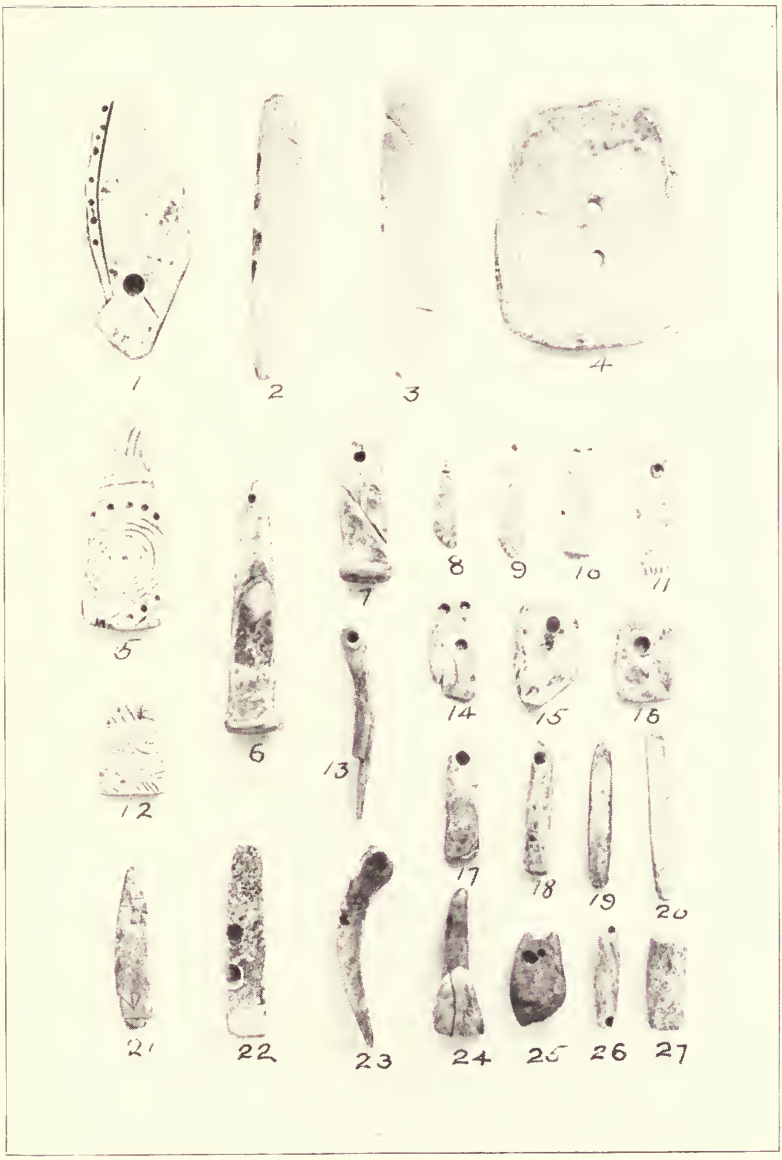


FIG. 89. Ornaments made of shell; $\frac{3}{4}$ size.

No. 26 might be considered a bead of unusual make, being perforated at each end for attachment. No. 27 is a cylindrical bead made of ocean shell, and perforated lengthwise for attachment to a necklace.

HOES MADE OF SHELL.

Hoes made of shell were found in goodly numbers in the Feurt site. The hoes shown in Fig. 90 are representative specimens found in the site, and resemble both as to kind of shells used and in manner of manufacture, those found at Baum's and Gartner's. Smith found the perforated shells at the Kentucky site. On many sites along the Ohio and Scioto rivers, a different form of hoe is found. This hoe is made of a ferruginous sandstone, which outcrops along the Ohio river and occurs in thin layers, and when broken into the desired form and sharpened form a very desirable implement. Of these, however not a single specimen was found in the Feurt site.

SHELLS USED FOR SPOONS AND SCRAPERS.

The specimens shown in Fig. 91 were doubtless used as spoons and scrapers, or both. They were abundant and were no doubt a very useful implement. All show use and many are worn, as shown in the figure. The majority of the spoons or scrapers are plain, but many are perforated with a small hole for attachment to a handle or to clothing.

Shell spoons are frequently met with in the Ft. Ancient culture sites in Ohio. At Baum's shell spoons were found in the village site as well as the graves, but no specimens were found at Gartner's. Smith found shell spoons in the Kentucky site and they have been reported from many village sites along the Ohio river.

CONCLUSIONS.

The examination of the Tremper Mound, in 1915, very naturally led to the desire to know something of the inhabitants of the Feurt Mounds and Villagesite, lying just across the Scioto river to the eastward. The close proximity of the sites, as well as their relative size and importance, was sufficient to raise the question as to whether or not there might have been

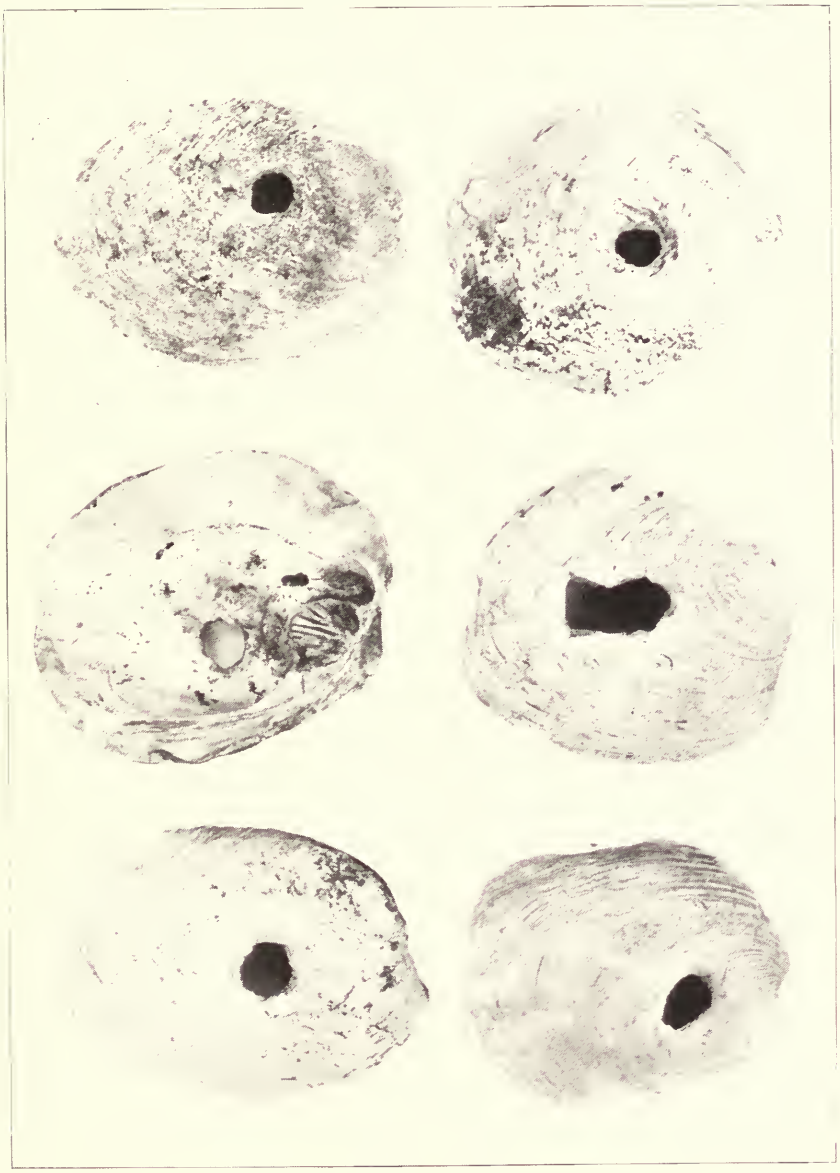


FIG. 90. Hoes made of mussel shell; $\frac{2}{3}$ size.

Fig. 91. Shell spoons and scrapers made of mussel shell; $\frac{2}{3}$ size.

some connection between the two. It was apparent without detailed examination that the cultural stages represented by the two sites were extremely different, and that if any connection were to be discovered it would be due entirely to contemporaneity of occupation and the consequent relationship which, amicable or hostile, is bound to exist where two peoples are co-resident in a vicinity.

In the examination of the Tremper mound, some objects were found which seemed pertinent to a culture other than that of the occupants and builders; not many, to be sure, for being of the most advanced type of peoples resident in prehistoric Ohio, they doubtless were mainly self-sufficient and found but little among the treasures of their lowlier neighbors which they would deign to possess. Still, there were a few things — some flint arrowpoints, an object or two of stone and bone — which apparently belonged to the so-called Fort Ancient peoples resident in most of southern Ohio.

And while not many objects having their origin with the latter people could be expected among the relics of the esthetic Hopewell culture, it was reasonable to suppose that the comparatively elegant ornaments and implements of copper and other materials possessed by these would be highly prized and sought for by those who lacked the skill to produce them.

It was therefore, an important consideration in the exploration of the Feurt site, readily attributable to the Fort Ancient culture, to determine the presence or absence thereat of objects pertaining to the nearby Tremper site, and from this, to prove or dispose of the already formed opinion that the occupants of the two sites were not unacquainted with one another.

If it should prove that they were contemporaneous in their residence in the vicinity, it was patent that their relations might be either friendly or unfriendly. If friendly, it was reasonable to hope that we might find in the Feurt site some few of the finely wrought and obviously desirable objects of the Tremper people, secured and prized by the less advanced culture. In this case, it would naturally be expected that such valued possessions would be found with burials.

If, on the other hand, the relationship was hostile, such objects might still be found, but under very different conditions. Observation has shown that the Fort Ancient peoples, while less advanced along esthetic lines, were numerous, practical and powerful, and instances are not lacking to show that they sometimes took indemnity from their aristocratic neighbors. In such case, the instinctive impulse, noted even among the historic Indian tribes, prevailed, and instead of appropriating the rich booty captured from the enemy for use as their own, their one thought seems to have been to mutilate, batter and destroy what pertained to the hated opponent. This is well illustrated in the find of copper, mica and other objects at Fort Ancient some years ago, which apparently had been captured by the residents from the higher culture, then broken, battered and mutilated and hidden away in the earth. In either event — whether evidence pointed to a hostile or a friendly acquaintance, — it would, if forthcoming, prove the contemporaneity of the two peoples in question.

As it has been shown in the text that objects of copper were found with burials — thus indicating a friendly barter or interchange of commodities — and that, further, objects of undoubted Tremper type were found discarded after having been destroyed or mutilated — pointing to hostile relation between the two — it seems reasonable to conclude that the inhabitants of the Feurt site and the Tremper site, for a time at least, were contemporaneous in their occupation of this section of the Scioto valley. Furthermore, the order of the changed contact is apparent, since the objects found with burials pertained to the earlier occupation of the villagesite, while those indicating hostile relations were identified with the later occupation.

A possible explanation of this later misunderstanding may be found in the deposit of Ohio pipestone, adjacent to the Feurt site. Exploration demonstrated that both the Feurt and the Tremper peoples drew heavily upon this material, the old quarries of which are within a very short distance of the Feurt village. The working of these quarries may have proved to be the *casus belli* between the two aboriginal settlements, and many

account for the apparent change in their relationship toward one another.

Aside from this phase of the investigation, the inhabitants of the Feurt Villagesite are shown to have belonged to the great Fort Ancient culture. They were very similar in practically every respect to the inhabitants of the Baum Village and the Gartner Village, in Ohio, and to those of the Kentucky site examined by Smith.

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